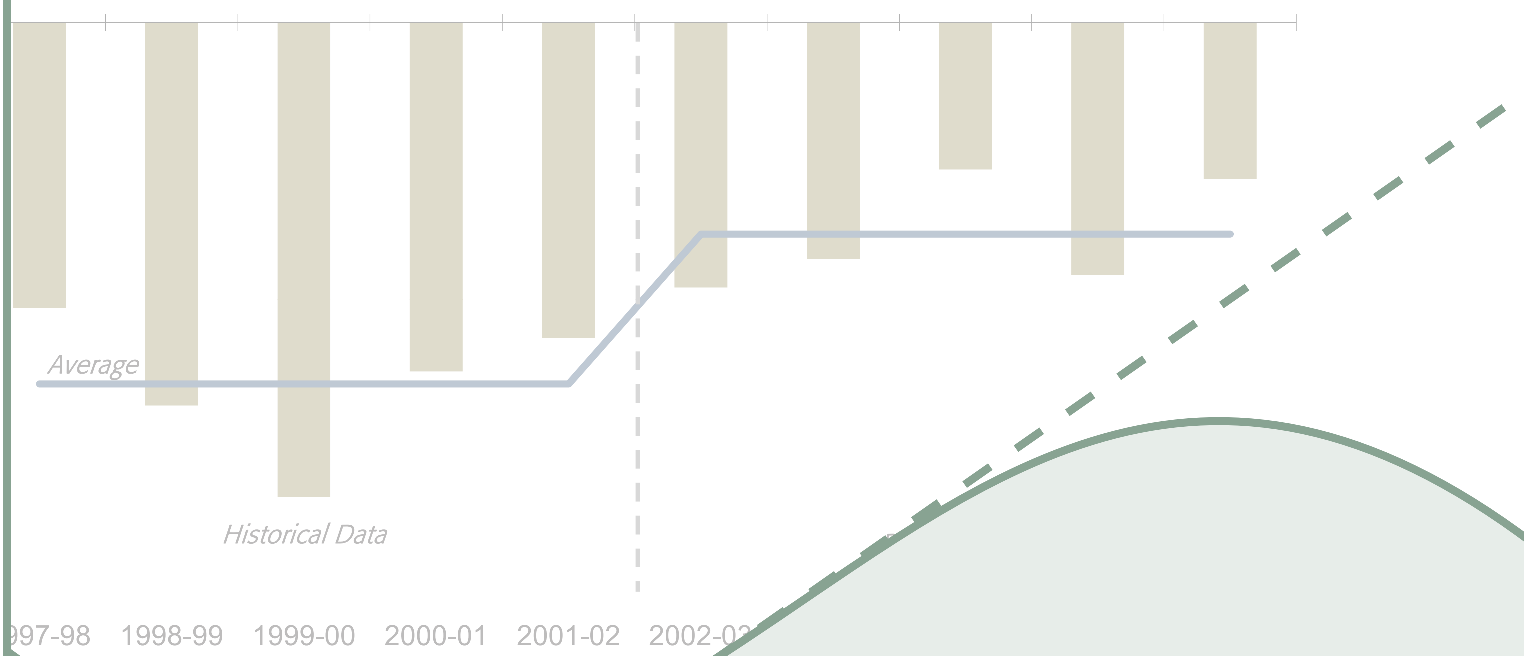
K-12 SCHOOL ENROLLMENT PROJECTIONS STUDY

OFFICE OF SUPERINTENDENT
OF PUBLIC INSTRUCTION



Lapkoff & Gobalet
Demographic Research Inc.

BERK & ASSOCIATES

Final Report: December 24, 2008

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Contents

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1.0 INTRODUCTION

1.1 Project Purpose and Overview

The intent of this study is to analyze the accuracy of the Office of the Superintendent of Public Instruction's (OSPI) school district enrollment projection methodology and alternative methodologies for the purposes of determining state funding eligibility for the School Construction Assistance Grant Program (SCAGP). The analysis presented herein is a comparative assessment of projection methodologies within district size and growth rate categories, as well as in total. Based on the results of this analysis, key recommendations for improving the existing methodology are presented.

1.2 Background

Legislative Direction

This report was prepared in response to direction and a proviso issued by the 2008 Legislature as part of the supplemental capital budget. Specifically, the proviso required that:

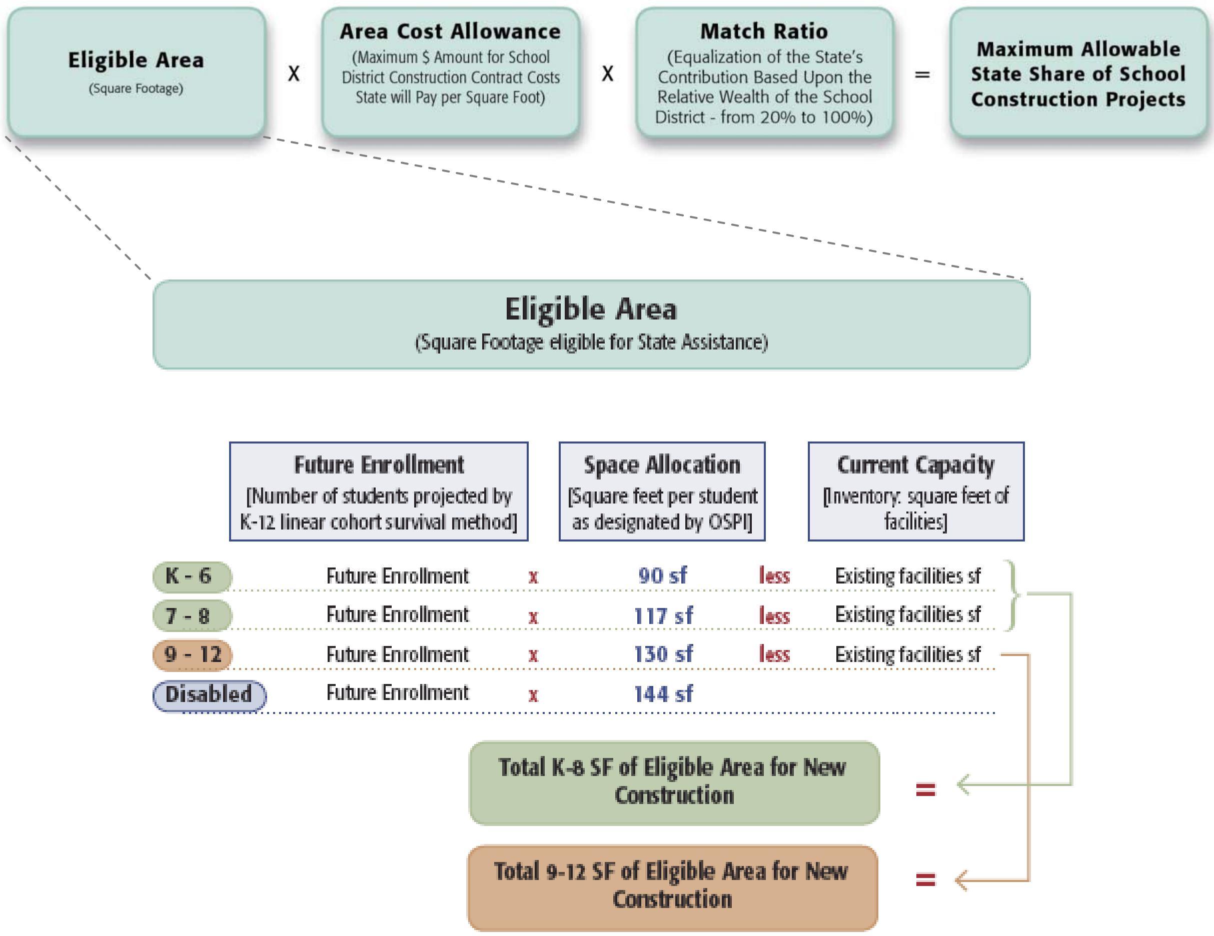
> "The Office of the Superintendent of Public Instruction (OSPI) contract with a research organization to conduct an evaluation of the accuracy and reliability of the current method used for forecasting school district enrollment for determining eligibility for the school assistance program. This evaluation must also include a review of different methodologies used by school districts in projecting their enrollment for capital planning and budgeting purposes. A final report resulting from this evaluation must be submitted by January 1, 2009."
> *(Chapter 328, Laws of 2008, Section 5016, Enrollment Projections Evaluation Study)*

K-12 School Construction Funding Formula Transparency Study

Concurrent with the research undertaken for this report, OSPI was required to study the transparency and efficacy of the State's current School Construction Assistance Grant Program (SCAGP), analyzing options to improve funding formula transparency in terms of the formula components, assumptions, and expected funding sources. The resulting study described the existing formula in detail and included a number of recommendations developed in conjunction with a Working Group of stakeholders from large, medium, and small school districts and OSPI around how to improve formula transparency.

The transparency work is closely related to this Enrollment Study as district level enrollment projections are one of the key drivers in the funding formula. **Exhibit 1** below shows the components of the State's main K-12 school construction funding formula for *new construction*.

Exhibit 1
SCAGP Formula for New Construction Projects



Source: OSPI, Berk & Associates, 2008

As depicted here, the first step in determining state assistance for new construction projects is to calculate the *district-wide eligible area in square feet*, which is determined by deducting the existing space inventory from "needed space." The space that the school district will need in the next five years is determined by multiplying the number of students projected in the next five years by the square foot allowance per student.

Enrollment projections extending five years into the future are thus an important driver in the formula. Understated projections would lead to less "needed space," consequently decreasing the amount of State funding a district might be eligible for. Conversely, overstated projections could lead to an over estimation of need for space.

It is important to understand that per legislative direction, this study aims to evaluate enrollment projection accuracy strictly in the context of SCAGP. The Washington State Caseload Forecast Council projects public K-12 enrollments for the purposes of the determining the Governor's operating budget, and individual school districts project enrollments for a multitude of purposes including capital planning, faculty planning, and budgeting. Given the specific constraints of the SCAGP program, requiring OSPI to generate a large number of district-level projection, methodologies that work well for an individual school district might not be best suited to the SCAGP program.

The 1990 Report of Cohort Survival Enrollment Projection Refinement

The last time OSPI undertook a comprehensive review of enrollment projection methods was in 1990. As part of this effort, the 1990 *Report of Cohort Survival Enrollment Projection Refinement,* prepared by John Wardwell and Dean Judson, was thoroughly reviewed. Many of the authors' insights and work products are still relevant today, and the comparative testing and evaluation we have incorporated into this work are similar to the process used in the 1990 Wardwell and Judson study--using several analytic methods to "predict" past enrollments.

In the study, the authors noted that more accurate models could be used at the district level, but they were searching for a method that would be practical for OSPI staff members to execute. More data are available today than there were in 1990, and while we have reviewed some of the same projection methods considered in 1990, we have also been able to include analyses with respect to the impact of housing unit growth on enrollment projections – something that was not feasible at the state level in 1990.

The method currently used by OSPI resulted from recommendations in the 1990 report, and the analysis that follows will show that it is relatively accurate. Based on our extensive experience working with school districts and on the limited research conducted in other states for this study, it is one of the most widely used methods by school districts and other agencies.

1.3 Summary of the Report

The following report outlines how the study was approached and methodology used in the analysis of enrollment projection methods. It discusses the current method OSPI uses to project school district enrollment, and its relative strengths and weaknesses. This is followed by an evaluation of the accuracy of the current method. Alternative projection methods are described, tested, and compared to one another and OSPI's current method. Lastly, findings and recommendations are presented based on the results to the analysis.

Following this approach, the Report is comprised of the following five chapters:

- **Chapter 2.0** provides an overview of how the study was approached, the data used in the analysis, the framework for how the projection methods were evaluated, and issues arising from the development of online learning programs.

- **Chapter 3.0** details the cohort survival methodology and its advantages and disadvantages. It then discusses trends in state-wide enrollment trends and how effective the cohort survival method has been at capturing these trends.

- **Chapter 4.0** examines other enrollment projections used by comparable states and by Washington school districts and identifies other methods to test.

- **Chapter 5.0** compares how each of the different methods performed in projecting enrollment by district size and district growth rate.

- **Chapter 6.0** includes a summary of findings and recommendations.

2.0 APPROACH AND METHODOLOGY

The approach to this study was focused around a quantitative and comparative demographic analysis. In order to inform that analysis, a number of stakeholder interviews were conducted with school districts in Washington and demographic professionals in other state agencies in Washington and other states of interest. Throughout the process OSPI, the School Construction Funding Formula Work Group, and the Legislative Task Force on School Construction Funding were kept abreast of progress and preliminary findings through periodic presentations. This section describes the process and methodology in detail.

2.1 Process

As directed by the Legislature and further refined by OSPI, this study was designed to encompass the following seven steps.

1. Document OSPI's Current Enrollment Projection Formula

2. Review and Assess the Findings and Applicability of OSPI's September 1990 *Report of Cohort Survival Enrollment Projection Refinement*

3. Evaluate the Accuracy and Reliability of OSPI's Current Method used for Forecasting School District Enrollment.

4. Review the Various Methodologies used by School Districts in Projecting their Enrollment for Capital Planning and Budgeting Purposes.

5. Review and Assess School Enrollment Forecast Methods used in Other States.

6. Provide Analytically Valid Comparisons and Data to Support the Evaluation of OSPI's Current Enrollment Forecast Method and Comparisons to Alternative Methods.

7. Present options for comparative evaluative approaches.

These steps can be grouped as follows:

Research and documentation. The first step for accomplishing these tasks involved documenting the current method used by OSPI, the K Linear Cohort Survival method, and understanding what other methods are currently being used by school districts in Washington and elsewhere. The research identified several commonly used alternatives, which were then tested to determine their accuracy and reliability compared to OSPI's current method. Review of the following documentation was essential to achieving this objective:

- The 1990 *Report of Cohort Survival Enrollment Projection Refinement* was the last comprehensive review of enrollment projection methods in the State of Washington. The study evaluated the effectiveness of different enrollment projection methods, and it served as a starting point for this latest study.

- OSPI publishes periodic enrollment projection reports, known as "1049 Reports," which show historical enrollments by grade level for the last six years and the resulting five-year grade level forecasts for a school district. These grade level forecasts are then incorporated into the funding formula for SCAGP.

- School district funding application submittals to OSPI require information on demographics and enrollment projections for the district. These submittals were reviewed to identify districts that used methods other than the cohort survival method to project enrollment.

- Supplemental enrollment projection reports by school district in Washington were also reviewed in identifying other projection methods used.

Stakeholder Interviews. **Attachment A** includes a list of all stakeholders interviewed during the development of this study. These interviews served to identify alternative enrollment projection methodologies and understand the potential strengths and weaknesses of these methodologies as perceived by their users. **Attachment B** includes the complete list of questions covered during the interviews. The following types of organizations were targeted for this effort:

- Washington State school districts (those identified by work group, and those with high online learning enrollments)

- Comparable Western states: California, Colorado, Nevada, and Oregon

- Washington State Caseload Forecast Council

- Office of Financial Management forecasting department

Quantitative Analysis. Quantitative, demographic analysis was a key part of the process undertaken through this study. The accuracy and reliability of the K Linear Cohort Survival method was tested using historical school district enrollments. These "historical forecasts" incorporated data from 1997-2002 in the K Linear Cohort Survival method and compared the forecasts to the actual enrollment for the years 2003-2007.

Comparative Analysis. In addition to evaluating the K Linear Cohort Survival method, alternative methods were evaluated on how well they performed for districts. Historical forecasts were calculated using alternative methods, and the projections were compared to each other based on the district's size, growth rate, and in total.

2.2 Data

Data Types and Sources

Data for testing the various methods was a key element for an accurate, comparable, and thorough analysis. The following types of data and sources were relied upon for this analysis:

Current and historical school district enrollment figures. This data, at the core of the analysis, was obtained from OSPI and included total enrollment for every school district in the State from 1997 to 2007 broken down by grade level. Overall, 284 of 295 total districts (96%) were analyzed. Districts not included were missing data for a number of years and/or grade levels. District enrollment data was not available for years before 1997, limiting the window of analysis to the most current time period.

Births data. Using birth counts is a common way to predict kindergarten enrollments five years hence. Birth data came from the Washington State Department of Health Center for Health Statistics, and listed the number of births annually by county from 1980 to 2006. The county and city were the smallest geographic level available for birth data. However, school districts can cover more than one county, and these counties may have very different birth rates overall.

Housing units. Another key dataset was the number of housing units built in a school district. As new housing units can have a significant effect on school enrollments, housing units were used to adjust enrollment calculations where housing growth patterns during the projection period differed than those experienced during the historical period. Housing unit data was obtained from two sources: (1) the Washington Office of Financial Management (OFM) maintains housing units by type (single-family, multi-family, and mobile home units) and by county; and (2) the Small Area Estimate Program uses new and demolished housing unit data to update Census block data to estimate total housing units by school district. This data was available starting in 2000, corresponding with the 2000 census.

Distance learning. A recent factor that needed to be taken into consideration was the development of kindergarten through 12th grade online learning programs. Students enrolled in these programs are included in the enrollment by grade level data maintained by OSPI. Online enrollment figures were used to (1) identify districts where online enrollment was large enough, as a percent of total enrollment, to affect the accuracy of enrollment projections and (2) to adjust actual enrollments for comparison purposes accordingly. To have an understanding of the possible impact of online students, OSPI provided figures for online full-time equivalent (FTE) students by school district for 2007.

Key Issues with Data Sources

Geographic. There were a few data limitations encountered in the analysis. One has to do with geography. Enrollment figures were available for individual school districts, while births and housing unit data by type were only available at a county level. Several district's boundaries are within two or three different counties. Also, a district's demographic composition and building trends may not necessarily reflect those of the county. To address the issue of a district covering two or more counties, the primary county associated with a district was assigned to the district, based on OFM's small area estimates program (SAEP), which includes school districts and lists an associated county.

Continuity of Housing Data. A second issue was the continuity of the housing unit data. Housing unit data from 1999 and before is based on intercensal estimates, where housing data is interpolated using reported housing permits and demolitions. Because housing data for 2000 and after uses the 2000 Census as a base, housing data from 1999 and 2000 do not always match up. For example, for a large number of counties there are more mobile home units in 1999 than 2000, likely due to a lack of reporting of demolition activity. As a result, for this study, only data for the last eight years (starting in 2000) was analyzed. If methodology for calculating housing units is changed again in the future, this will need to be taken into consideration if housing units are a data source being used to project enrollments.

Limited Historical Enrollment Data. Historical enrollment data by district and grade level was available starting in 1997. Therefore, 1997-2002 data was used to predict 2003-2007 enrollments, but no additional time periods could be analyzed for accuracy using the K Linear Cohort Survival method. Consequently, this analysis is limited to one time period, and results might differ for other time periods, depending upon the demographic trends and anomalies experienced during the time period.

Online Learning FTE versus headcount enrollments. Although the enrollment figures for SCAGP are headcount (not FTE), FTE enrollments were used for evaluating online learners because they are better for capturing part time students. Furthermore, by subtracting online FTEs from district headcount it is likely that the resulting enrollments for the purposes of SCAGP will be slightly overstated, as a part-time online student doesn't necessarily attend classes in school for the remaining time. Using online headcount would likely have the opposite effect, as students who do attend school part time would be excluded from the resulting enrollments. Both scenarios yield imperfect results, and OSPI's data collection and reporting systems are constrained in how they capture online learners.

2.3 Comparative Framework

To assess the effectiveness of the different projection methods, the study evaluated how each method performed for different types of districts as defined by size and growth rate. The objective was to determine whether characteristics such as district size or growth caused abnormally high or low error rates and identify if there were more reliable projection methods for different types of districts The following describes how district size and growth were defined for the analysis.

Size Categories

To evaluate district performance by its size, four size categories were created using the following working definitions of district size:

- **Large:** Enrollment greater than 5,000.
- **Medium:** Enrollment greater than 1,000 but less than 5,000.
- **Small:** Enrollment greater than 100 but less than 1,000.
- **Very Small:** Enrollment less than 100.

Exhibit 2 below summarizes the number of districts in Washington that fall into each district size category. While the Small district size category contains the most districts, the majority of student enrollment, 75%, is contained in large districts. Medium districts contain another 20.1% of students, and student enrollment in Small and Very Small districts makes up less than 5% of total state-wide enrollment.

Exhibit 2
Summary of Districts by District Size Category, 2007

District Size Category	Number of Districts in Analysis	2007 Total Enrollments	Percent of Total Enrollment
Large	60	759,515	75.0%
Medium	87	203,948	20.1%
Small	105	47,396	4.7%
Very Small	32	1,756	0.2%
Total	284	1,012,615	

Source: OSPI, Berk & Associates, 2008.

Growth Categories

Anecdotally, stakeholders interviewed throughout the course of this project often focused on challenges faced by "high growth" districts. From a capital planning perspective, these districts have difficulty keeping up with enrollment demand and frequently must rely upon portable units to house students. That being said, there was no standard definition of what a "high growth" district is.

Defining a "high growth" district from a demographic perspective includes both a percentage growth rate and total enrollment growth in terms of FTEs. Thus, five categories based on growth rate were created as follows:

- **High Growth:** Average annual growth rate greater than 2% AND total growth of at least 500 students.

- **Growth:** Average annual growth rate greater than 2% AND total growth of at least 100 students. This category also includes districts with total growth of at least 500 students but average annual growth rates of less than 2%.

- **Small Change:** Districts with less than a 2% average annual change AND less than a total change of 100 students.

- **Decline:** Average annual decline rate of -2% or more and total loss of 100-499 students. This category also includes districts that lost more than 500 students but had an average annual decline of less than 2%.

- **Strong Decline:** Average annual decline rate of -2% or more AND a total loss of 500 or more students.

Exhibit 3 below summarizes the number of districts in Washington that fall into each district growth category. The majority of students, about 62%, are enrolled in Small Change districts. Growth districts contain the second highest number of students, totaling 17% of total enrollment. Strong Decline districts contain the smallest proportion of students, at just below 4%.

Based on the parameters defined above, we identified 10 high growth school districts. They include:

- Camas (Clark County)
- Pasco (Franklin County)
- Moses Lake (Grant County)
- Issaquah (King County)
- Snoqualmie Valley (King County)
- Tahoma (King County)
- Steilacoom Historical (Pierce County)
- Monroe (Snohomish County)
- Central Valley (Spokane County)
- Yelm (Thurston County)

These districts account for over 82,000 students and 8% of the State's total enrollment.

Exhibit 3
Summary of Districts by District Growth Category

District Growth Category	Number of Districts in Analysis	2007 Total Enrollments	Percent of Total Enrollment
High Growth	10	82,695	8.2%
Growth	27	170,900	16.9%
Small Change	228	625,596	61.8%
Decline	16	93,448	9.2%
Strong Decline	3	39,976	3.9%
Total	284	1,012,615	

Source: OSPI, Berk & Associates, 2008.

Exhibit 4 shows the relationships between districts in specific size and growth categories. Based upon the parameters defined above, nine of ten high growth districts are also large districts. The small and very small districts are largely defined as small change with respect to growth rates. The largest portion of students (approximately 43%) are enrolled in large districts with small changes in growth.

Exhibit 4
District Size and Growth Category Correlation

Number of Districts

	Large	Medium	Small	Very Small	Total
High Growth	9	1	0	0	**10**
Growth	9	15	3	0	**27**
Small Change	34	61	101	32	**228**
Decline	5	10	1	0	**16**
Strong Decline	3	0	0	0	**3**
Total	**60**	**87**	**105**	**32**	**284**

Number of Students Enrolled

	Large	Medium	Small	Very Small	Total
High Growth	79,957	2,738	-	-	**82,695**
Growth	132,140	37,116	1,644	-	**170,900**
Small Change	434,611	143,973	45,256	1,756	**625,596**
Decline	72,831	20,120	496	-	**93,448**
Strong Decline	39,976	-	-	-	**39,976**
Total	**759,515**	**203,948**	**47,396**	**1,756**	**1,012,615**

Percent of Students Enrolled

	Large	Medium	Small	Very Small	Total
High Growth	8%	0%	0%	0%	**8%**
Growth	13%	4%	0%	0%	**17%**
Small Change	43%	14%	4%	0%	**62%**
Decline	7%	2%	0%	0%	**9%**
Strong Decline	4%	0%	0%	0%	**4%**
Total	**75%**	**20%**	**5%**	**0%**	**100%**

Source: Berk & Associates, 2008

2.4 Other Considerations

Online Learning

The use of online learning programs is a relatively recent phenomenon that has the potential to impact a district's enrollment projection. Because classes are offered online, students do not necessarily have to be in a physical school building, nor do they have to be a resident of that school district. Students enrolled in a school district's online program count toward that district's enrollment as one or a fraction of a full-time equivalent student (FTE). As a result, there is uncertainty about how much space districts with large online enrollments really need based on the current enrollment projections, or how this impacts the accuracy of these projections.

To better understand online learning programs in the State, online enrollment was analyzed by school district, followed by interviews with districts that had a large proportion of online students. Forty-one of 295 districts in Washington have students enrolled in an online program. For almost all of these, online students make up less than 5% of the total enrollment; many are below 1%. However, five districts (Quillayute Valley, Steilacoom Historical, Wellpinit, Kittitas, and Winlock school districts) had sizable online enrollment making up over 40% of total enrollment. **Exhibit 5** shows the districts with students enrolled online and the percent of the district's total enrollment enrolled online.

OSPI's systems are limited in how they account for online students. FTE enrollments for online students recognize if a student is not receiving 100% of his/her education online. However, the data collection systems cannot currently account for a student who may attend school 40% of the time in district X and take online courses for the remaining 60% in district Y. Anecdotally, it is understood that most online learners are in remote locations or home-schooled and do not attend classes in district facilities. If this is the case, it is less problematic for enrollment projections for the purposes of SCAGP (because online learners can simply be excluded from the district's enrollments). But to the extent that the same students are using facilities and online instruction, this needs to be better accounted for. For the purposes of this analysis, online FTEs were excluded from district enrollments.

Exhibit 5
Online Learning Program Enrollment by School District, 2007

School District	2007 Total Enrollment	2007 Online FTE	2007 Enrollment Excluding Online	Percent Online	District Size	District Growth Rate
Wellpinit	554	236	318	42.7%	Small	Small Change
Steilacoom Hist.	4,763	2,025	2,738	42.5%	Medium	High Growth
Quillayute Valley	2,390	980	1,410	41.0%	Medium	Small Change
Kittitas	777	152	625	19.6%	Small	Growth
Winlock	845	66	779	7.8%	Small	Small Change
Cle Elum-Roslyn	966	36	930	3.7%	Small	Small Change
Monroe	7,067	238	6,829	3.4%	Large	High Growth
Port Townsend	1,482	49	1,433	3.3%	Medium	Decline
Walla Walla	6,102	170	5,932	2.8%	Large	Small Change
North Mason	2,281	61	2,220	2.7%	Medium	Small Change
Prosser	2,899	71	2,828	2.4%	Medium	Small Change
Davenport	595	12	583	2.0%	Small	Small Change
Naches Valley	1,492	28	1,464	1.9%	Medium	Small Change
Marysville	11,899	203	11,696	1.7%	Large	Growth
Kiona-Benton City	1,578	24	1,554	1.5%	Medium	Small Change
South Kitsap	10,400	145	10,255	1.4%	Large	Decline
Federal Way	22,193	303	21,890	1.4%	Large	Small Change
Ridgefield	2,131	23	2,108	1.1%	Medium	Growth
Auburn	14,591	154	14,437	1.1%	Large	Growth
White River	4,441	43	4,398	1.0%	Medium	Small Change
Bethel	17,838	170	17,668	1.0%	Large	Growth
Goldendale	1,084	10	1,074	0.9%	Medium	Small Change
Finley	980	9	971	0.9%	Small	Small Change
Wahluke	1,871	16	1,855	0.8%	Medium	Growth
Yelm	5,391	34	5,357	0.6%	Large	High Growth
West Valley (Yakima)	4,887	29	4,858	0.6%	Medium	Small Change
Centralia	3,476	19	3,457	0.6%	Medium	Small Change
Okanogan	1,006	5	1,001	0.5%	Medium	Small Change
Kent	27,231	127	27,104	0.5%	Large	Small Change
Franklin Pierce	7,625	34	7,591	0.4%	Large	Small Change
Grand Coulee Dam	743	2	741	0.3%	Small	Small Change
Evergreen (Clark)	25,235	82	25,153	0.3%	Large	Small Change
Chehalis	2,953	10	2,944	0.3%	Medium	Growth
Newport	1,136	2	1,134	0.2%	Medium	Small Change
Kennewick	14,960	31	14,929	0.2%	Large	Small Change
Richland	10,146	19	10,127	0.2%	Large	Small Change
Selah	3,403	5	3,398	0.2%	Medium	Small Change
Orting	2,147	2	2,145	0.1%	Medium	Growth
Spokane	29,225	27	29,198	0.1%	Large	Decline
Vancouver	22,434	10	22,424	0.0%	Large	Small Change
Issaquah	16,472	1	16,471	0.0%	Large	High Growth
Total	**1,012,615**	**5,666**	**1,006,949**	**0.6%**		

Note: District growth rates are calculated using only actual in-class enrollment, and have been adjusted to exclude online enrollments.
Source: OSPI, Lapkoff & Gobalet, Berk & Associates, 2008

Berk & Associates interviewed administrators from Steilacoom Historical School District and Quillayute Valley School District to learn more details about districts with large online enrollments. Both districts offer very different types of online programs. Steilacoom Historical offers a kindergarten through eighth grade program that focuses on core classes, such as reading, math, and history. Quillayute Valley

School District's program is a high school-oriented program, which offers more elective classes, such as art and foreign language. However, there are several similarities. The majority of online students in both districts live outside that district. Neither district has plans to increase the number of online students beyond the number currently enrolled, and both track online students separately from students attending a physical classroom for internal purposes.

While the number of online learning programs offered by school districts is growing throughout the State, the growth of online learning overall is unclear. Most online programs throughout the State are still small relative to overall enrollment, and programs of this size would probably not alter enrollment projections significantly. The increasing number of programs available may mean that there is more competition for a limited number of students interested in online learning programs.

Overall, districts with large or growing online enrollment will likely need to have online FTEs subtracted from total district enrollment to increase the accuracy of the projection. This is because online learning programs are relatively new, and districts with relatively large online enrollment experienced a bump in total enrollment when the program was first offered. Because online learning programs first started during the analysis period, this "bump" caused the error rate of the K Linear Cohort Survival method to also increase, skewing the projection. An analysis of an earlier or later period, when online enrollment was more uniform, would not be as likely to have this problem.

3.0 CURRENT METHODOLOGY

3.1 Description of the K Linear Cohort Survival Method

There are two parts to OSPI's K Linear Cohort Survival method. The first part, and more universally used, is the cohort survival method. The second part is the K linear approach. Each part is discussed below.

The cohort survival method, used to forecast school enrollments, is quite straightforward. One starts with current enrollments, by grade, and then advances students one grade for each year of the forecast. Thus, the current year's kindergarteners become next year's first graders. The current year's first graders become next year's second graders, and so on. This process can be repeated as many years into the future as desired.

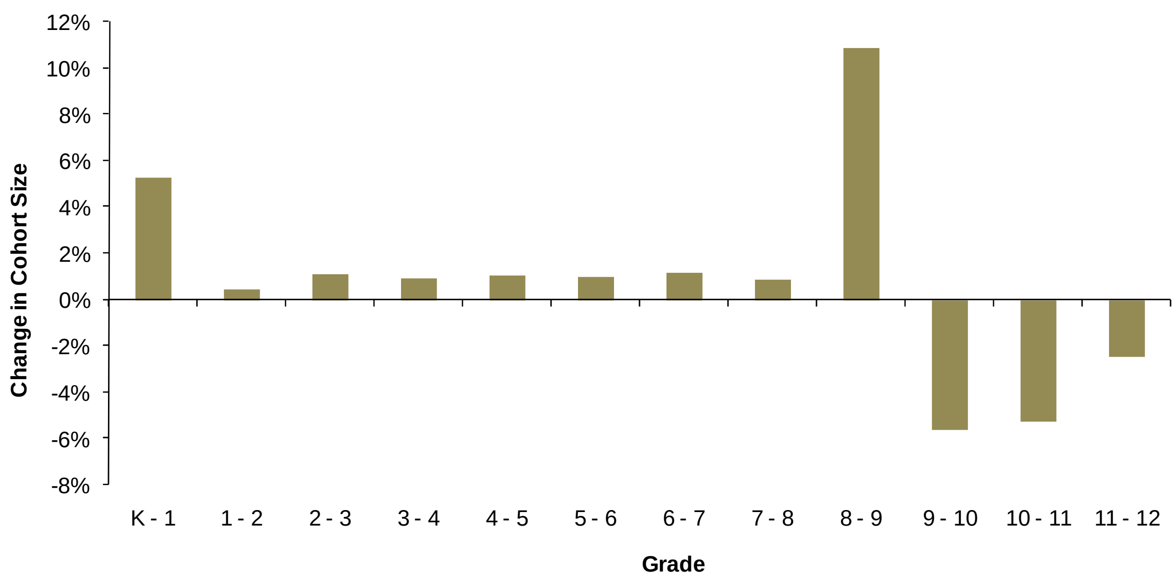
Two assumptions are needed in the forecast model. They concern:

1. "Grade progressions" – which quantify how cohort sizes will change as students move to the next grade; and
2. The size of future kindergarten classes (since there is no earlier grade upon which to base enrollments).

Grade Progressions. Because not all students progress to the next grade (and because new students sometimes join existing cohorts), the size of the cohorts should be adjusted as the students are progressed to the following grade. This adjustment is called a grade progression. Typically, assumptions about future grade progressions are based on recent progressions that have been measured empirically. For example, if during the last five years, each first grade class was 5% larger than the previous year's kindergarten class, the forecast might assume that this would continue to be the case. In other words, when forecasting the next year's first grade class, the forecaster would increase the size of the current year's kindergarten class by 5%.

To make the concept of grade progressions more concrete, **Exhibit 6** shows the grade progressions between Fall 2006 and Fall 2007 for Washington. The first bar of the chart shows that the size of the fall 2006 kindergarten class increased by 5% by the time it reached the first grade. This is not unusual because some parents choose to keep their five-year-olds in day care and first enroll their children in public schools as first graders. The high grade progression between eighth and ninth grades results from private school eighth graders enrolling in public high schools. Private school enrollment rates are lower for high school than for elementary school. Progressions for the highest grades are negative because students drop out, repeat grades, or graduate early. The elementary and middle school grade progressions have all been positive, indicating that all cohorts gained students as they progressed to the next grade. This is because more families with children move into Washington than move out.

Exhibit 6
Grade Progressions in Washington State – Fall 2006 to Fall 2007



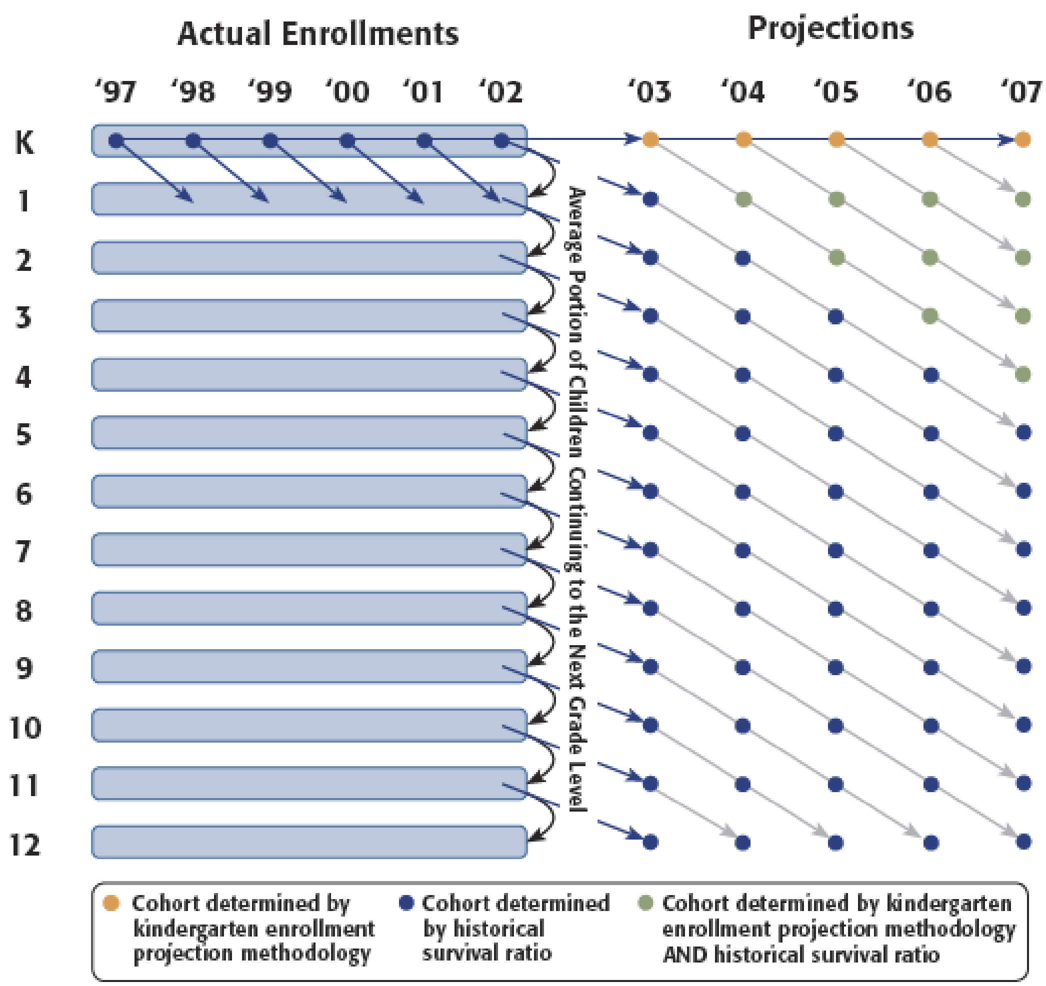
Source: Lapkoff & Gobalet, 2008

OSPI uses either a three-year or five-year average of grade progression rates to project future enrollments. It determines which average to use based on the growth history of the district over the previous six years. In growing districts, OSPI uses whichever average yields a higher enrollment projection, and in declining districts it uses the average that yields a lower projection.

K Linear Approach. The cohort survival method needs some way to obtain future kindergarten enrollments. Currently, OSPI assumes that the recent trend in kindergarten enrollments will continue. For example, if kindergarten enrollment had declined by 5% annually during the last five years, kindergarten enrollment is assumed to continue to decline by 5%. Mathematically, the K linear method requires plotting six years of actual kindergarten enrollments over time and identifying a best fit line using an ordinary least squares regression method. Each subsequent year of kindergarten projections is the subsequent point on the line.

Exhibit 7 below provides an illustrative example of the K Linear Cohort Survival method, combining both parts of the method.

Exhibit 7
Illustrative Example of the K Linear Cohort Survival Enrollment Projection Method



Source: Berk & Associates, 2008.

3.2 Advantages and Disadvantages of K Linear Cohort Survival Method

Advantages of the K Linear Cohort Survival Method

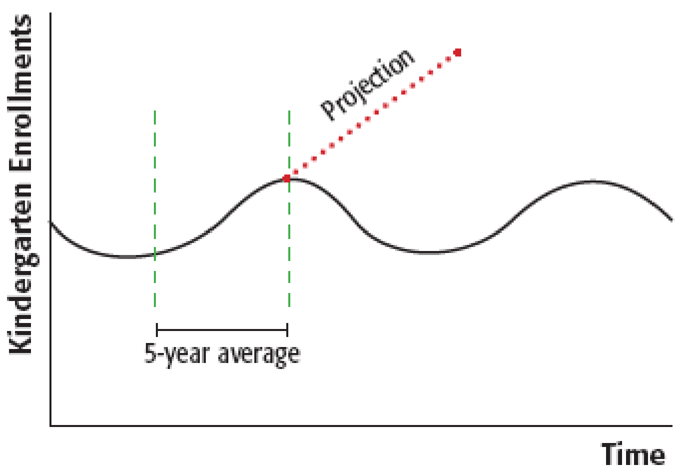
According to the OSPI Enrollment Projection study completed in 1990, the K Linear Cohort Survival method projected over 70% of the State's school districts' enrollment within ±5% of actual enrollments one year out. This current analysis shows that it projects 76% of the State's school districts within the same margin of error. This is a relatively high degree of accuracy in the short term.

A significant advantage of this method, particularly with respect to SCAGP, is that it is relatively simple to calculate. The only data input required is actual enrollments by grade over time. This simplicity allows the method to be used by the State and districts easily, and allows for transparency in explaining how certain enrollment projections were decided upon.

Disadvantages of the K Linear Cohort Survival Method

There are two major disadvantages with the K Linear Cohort Survival method, and a third disadvantage inherent in all projection methods. The first problem is that the method for calculating future kindergarten enrollments is likely to be problematic when the trend in kindergarten enrollments is changing. **Exhibit 8** illustrates the difficulties when faced with a change in trend. Five-year historical averages of kindergarten enrollments may not capture cyclical growth rate patterns, therefore over- or underestimating future enrollment, depending on when in the cycle the historical averages were taken.

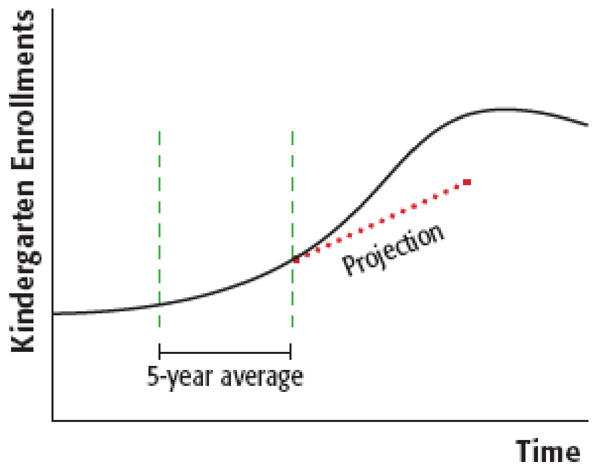
Exhibit 8
Projection Challenges: When the Trend Changes



Source: Berk & Associates, 2008.

Exhibit 9 illustrates another example of how changing trends would not be captured by the last five years' average enrollment.

Exhibit 9
Projection Challenges: High Growth Districts



Source: Berk & Associates, 2008.

The second major problem with the K Linear Cohort Survival method is that it will poorly forecast enrollments if migration patterns are changing. The most likely situation for this to occur is when there is a substantial change in housing development. For example, if a district expects substantial housing development, and has not recently seen any development, enrollments will be underestimated. The new housing will generate migration of households into the district and if the housing is family-oriented, new students will be housed in the development. None of this will be captured in the historical grade progressions.

The opposite situation can arise as well. If a district recently had substantial housing development, the grade progressions will reflect this recent increase in migration. The forecast will then assume this level of migration will continue. However, if housing development has stopped, the migration pattern will change, and the grade progressions will overestimate enrollments. To summarize, in districts with changing migration patterns, the cohort survival method will not work as well as in districts with stable migration patterns. Because housing developments are predictable, it is often possible to take changes in housing growth into account, but the current OSPI method does not do so.

A final disadvantage, which we believe will be inherent in all projection methods, is that it is difficult and perhaps impossible to have reliable methods for small districts. In districts with less than a 100 students, and even those with less than a 1,000 students, random variation will cause enrollments to fluctuate over time in unpredictable ways. Even a small amount of change in the number of students enrolled causes a relatively large percent change in enrollment levels. This results in less defined trends over time, and the method produces less accurate results.

State-wide Grade Progressions

Exhibit 10 shows state enrollments by grade, and **Exhibit 11** shows historical grade progressions for each year and each pair of grades. Both the total enrollments and the grade progressions they represent reflect the trends shown in **Exhibit 6** above. The size of kindergarten classes has increased by 5% to 8% by the time they reached the first grade. There is also a high grade progression between eighth and ninth grades (with enrollments increasing 10-12%), presumably resulting from private school eighth graders enrolling in public high schools. Progressions for the highest grades are negative because students drop out, repeat grades, or graduate early. Since 1997, the elementary and middle school grade progressions have all been positive, indicating that all cohorts gained students as they progressed to the next grade.

Exhibit 10
Washington State Enrollments by Grade

Grade	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
K	72,750	71,248	68,505	68,332	68,299	69,291	70,529	71,515	72,723	72,801	72,342
1	77,771	77,952	75,901	73,456	73,725	72,609	74,059	74,880	75,929	76,515	76,643
2	78,195	77,684	77,299	75,389	73,404	73,579	72,549	74,177	75,216	76,106	76,849
3	76,742	78,961	77,822	77,926	76,583	74,207	74,382	73,400	75,201	76,055	76,946
4	75,359	77,546	79,107	78,389	78,566	77,136	75,123	75,319	74,516	75,820	76,783
5	75,376	76,066	77,868	79,831	79,385	79,165	77,858	75,820	76,430	75,282	76,629
6	76,704	76,274	76,503	78,622	80,876	80,006	80,024	78,629	76,727	76,919	76,016
7	77,481	78,021	76,785	77,292	79,748	81,743	80,866	80,867	79,669	77,597	77,813
8	76,413	77,440	77,552	77,018	77,886	79,807	82,161	81,353	81,534	80,299	78,269
9	83,196	84,982	86,109	86,797	86,138	87,485	88,768	90,050	89,635	89,948	89,029
10	77,989	79,136	80,092	80,119	81,409	80,521	81,554	83,317	84,962	84,777	84,909
11	70,628	72,736	73,269	74,073	75,561	76,367	76,386	77,489	79,884	80,289	80,330
12	65,272	66,759	68,512	68,149	69,081	71,308	72,967	73,932	75,165	76,549	78,296

Exhibit 11
Washington State Grade Progressions

Grades	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
K - 1		107%	107%	107%	108%	106%	107%	106%	106%	105%	105%
1 - 2		100%	99%	99%	100%	100%	100%	100%	100%	100%	100%
2 - 3		101%	100%	101%	102%	101%	101%	101%	101%	101%	101%
3 - 4		101%	100%	101%	101%	101%	101%	101%	102%	101%	101%
4 - 5		101%	100%	101%	101%	101%	101%	101%	101%	101%	101%
5 - 6		101%	101%	101%	101%	101%	101%	101%	101%	101%	101%
6 - 7		102%	101%	101%	101%	101%	101%	101%	101%	101%	101%
7 - 8		100%	99%	100%	101%	100%	101%	101%	101%	101%	101%
8 - 9		111%	111%	112%	112%	112%	111%	110%	110%	110%	111%
9 - 10		95%	94%	93%	94%	93%	93%	94%	94%	95%	94%
10 - 11		93%	93%	92%	94%	94%	95%	95%	96%	94%	95%
11 - 12		95%	94%	93%	93%	94%	96%	97%	97%	96%	98%

Source: OSPI, Lapkoff & Gobalet, Berk & Associates, 2008

3.3 Testing the Accuracy of the K Linear Cohort Survival Method

Test of the Cohort Survival Method

To test the accuracy of a universal cohort survival model (used for all districts in the State), we performed an experiment using historical data. We started with 2002 enrollments, by grade. We then applied OSPI's projection methodology to project enrollments from 2003 to 2007. Actual enrollments were compared to the forecast. This experiment was done for each district in the State, as well as for the State as a whole.

State-wide Trends

Before viewing the results by district, the K Linear Cohort Survival method is applied to state enrollments. Using the 1997 though 2002 enrollments, we forecasted the 2003 to 2007 state enrollments. OSPI's method resulted in an underestimate of state enrollments by 3%. By comparing grade progressions during the earlier and later periods and kindergarten enrollments during the earlier and later periods, it becomes obvious why enrollments were underestimated.

To analyze the historical grade progressions, we summarized each year's grade progressions for each school level: one chart was made for each school level (as shown in **Exhibit 12**, **Exhibit 13**, and **Exhibit 14**). The columns to the left of each gray dashed line show the historical data used to forecast enrollments. The columns to the right of each gray dashed line show the actual grade progressions. The blue line shows the average grade progression during the 1997-2002 period and the 2003-2007 period. For each school level, the average grade progression was a little higher during the latter period. This means that the cohort survival model, using the 1997-2002 period, should underestimate 2003-07 enrollments, and this is what our experiment showed.

Exhibit 12
Washington State Grade Progressions – Grades K – 4 into Grades 1 - 5

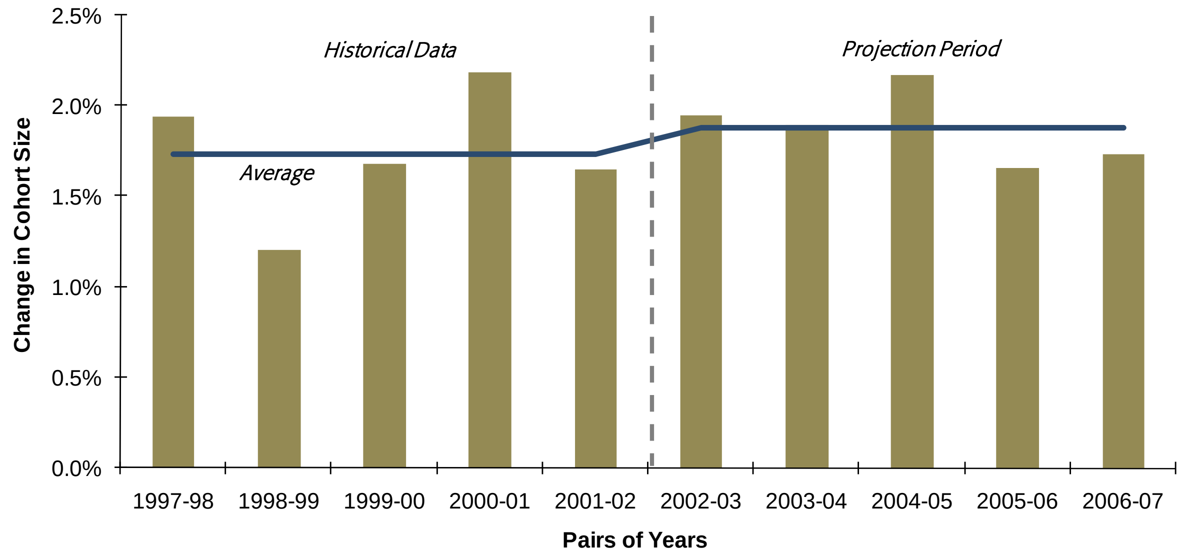


Exhibit 13
Washington State Grade Progressions – Grades 5 – 7 into Grades 6 - 8

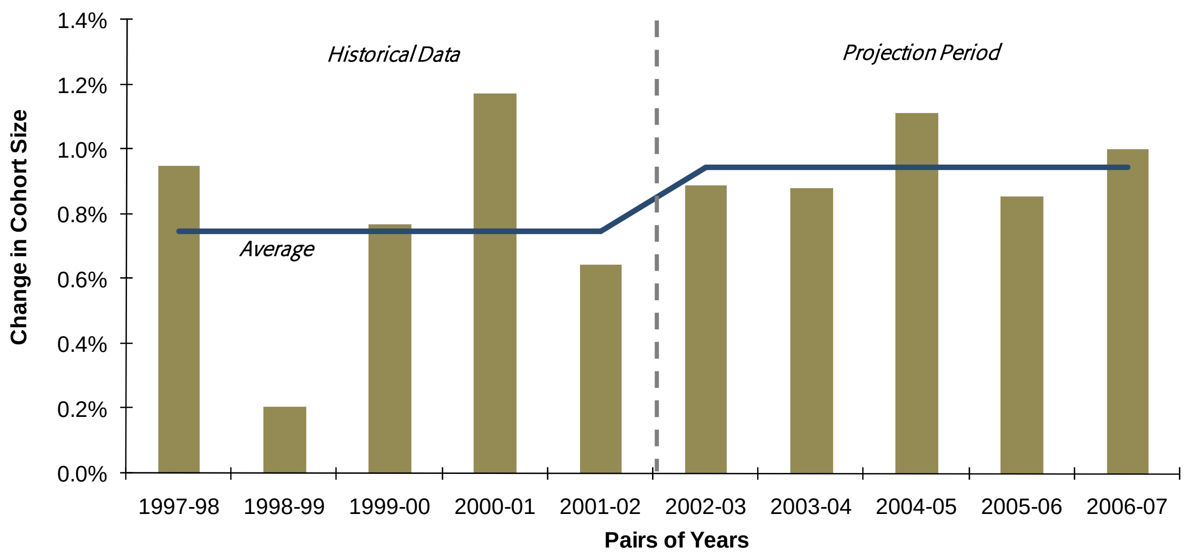
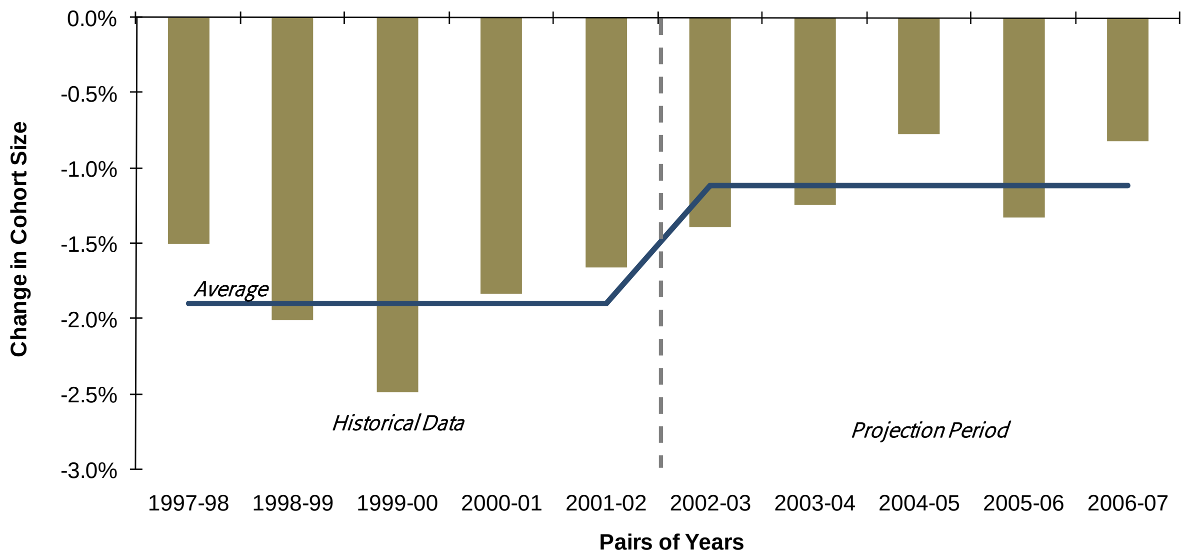


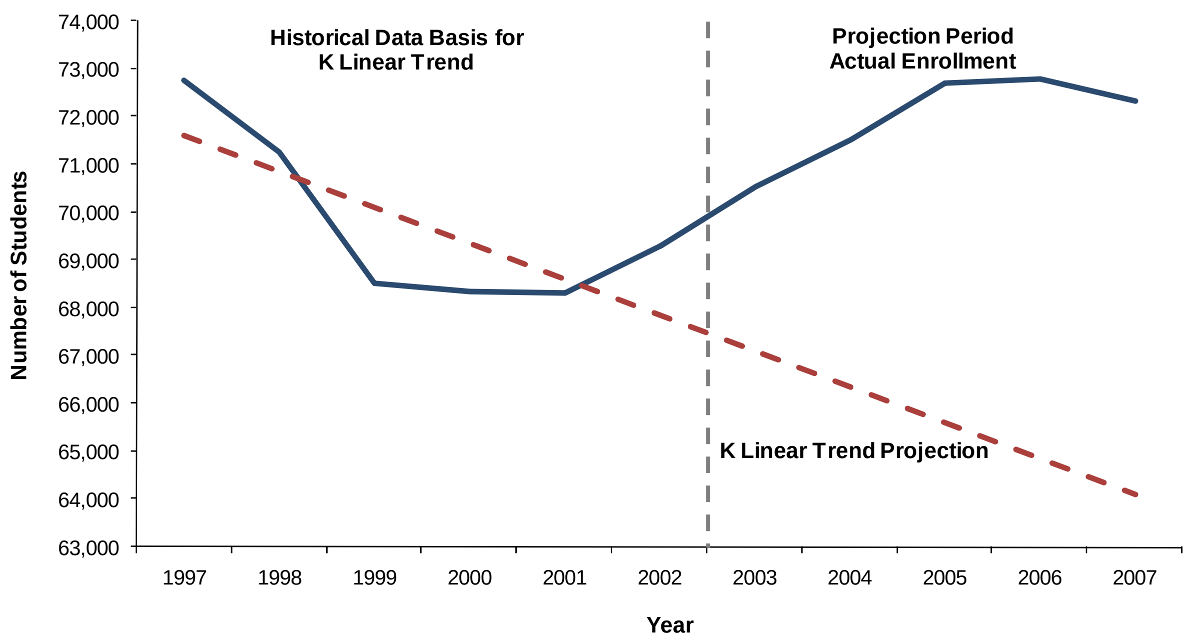
Exhibit 14
Washington State Grade Progressions – Grades 8 – 11 into Grades 9 - 12



Source: OSPI, Lapkoff & Gobalet, 2008

Exhibit 15 shows the kindergarten trend in the State during the two time periods. Note that kindergarten enrollments were declining during the 1997-2002 period, but rose during the 2003-2007 period. Continuing the trend would understate future kindergarten enrollments.

Exhibit 15
Washington State Kindergarten Enrollment, 1997 -2007



Source: OSPI, Lapkoff & Gobalet, 2008

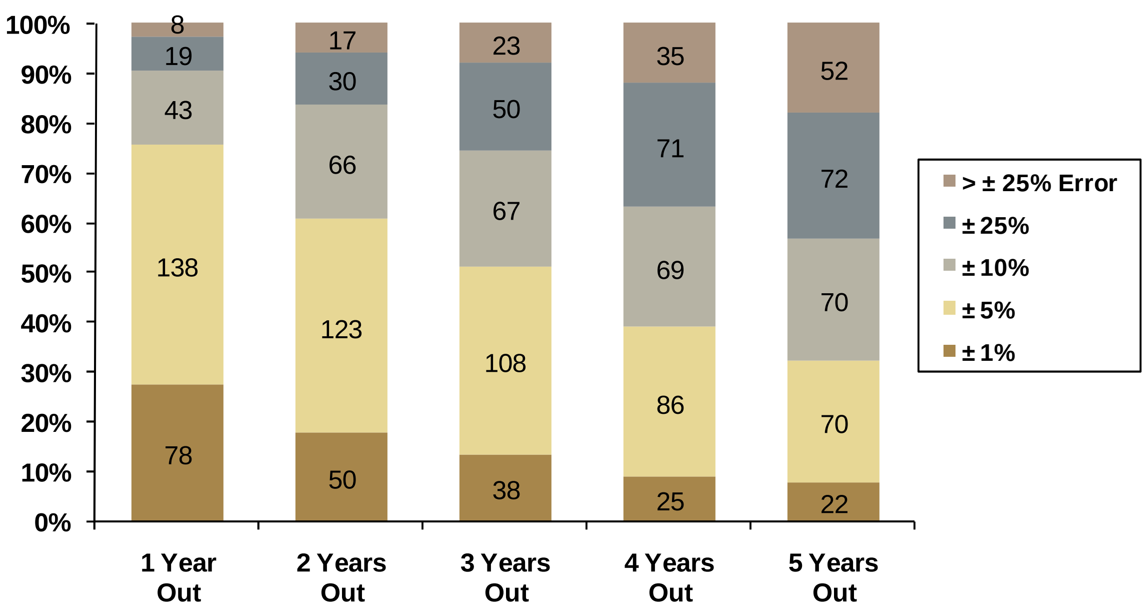
District-Level Analysis

Following the methodology detailed above, the accuracy of K Linear Cohort Survival projections was tested for each school district. Findings from these tests are discussed in more detail below, and complete results by district can be found in **Attachment C**.

Short Term and Long Term Accuracy

OSPI's current projection method is more accurate in projecting short term enrollment than long term enrollment. **Exhibit 16** summarizes the accuracy levels of this method at different distances into the future. One year out, over 75% of school districts are projected within ± 5% of actual enrollment. After five years, the proportion of schools projected within ± 5% drops to just over 30%. Over that same time period, the number of districts whose projections were greater than 25% different than actual numbers climbs from 3% to nearly 20%.

Exhibit 16
Short and Long Term Accuracy of OSPI's Current Method



Source: OSPI, Berk & Associates, 2008

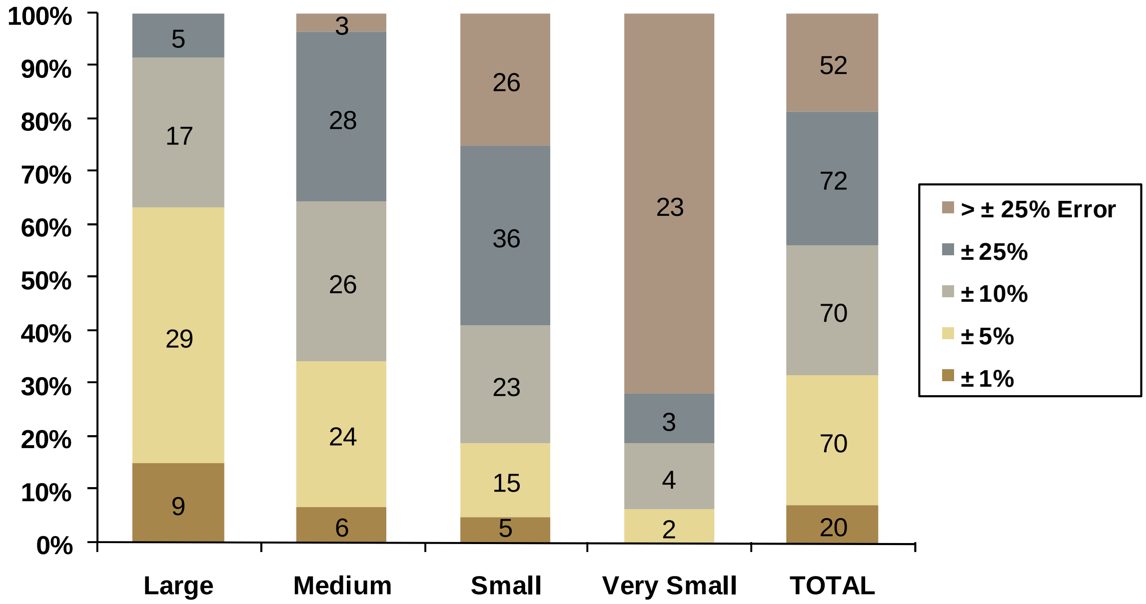
The following analyses focus on comparing error rates five years out. Because these projections are ultimately being used to determine eligibility for state construction funding, a long-term investment, accuracy in the longer term is important and helps to avoid situations like new schools needing portable units shortly after opening.

Accuracy by Size Category

Exhibit 17 below illustrates error rates for the K Linear Cohort Survival method five years out for different district size categories. The method is most accurate for large districts, and is increasingly less accurate the smaller the district size category.

The K Linear Cohort Survival method projects enrollments five years out within ± 5% of actual enrollments for 32% of all school districts in the State. These districts include 58% of the State's total K-12 student enrollment. About 63% of Large districts were projected within ± 5%, versus only 19% of Small districts. Over 70% of Very Small districts experienced errors greater than ± 25%.

Exhibit 17
Accuracy of K Linear Cohort Survival Method by District Size Category, 5 Years Out



Source: OSPI, Berk & Associates, 2008.

Accuracy by Growth Category

Growth and High Growth districts account for 26% of the State's K-12 student enrollment. These districts frequently have greater facility needs due to growth and might apply more frequently for SCAGP funding. It is therefore important that OSPI's enrollment projection methodology be accurate for high growth districts.

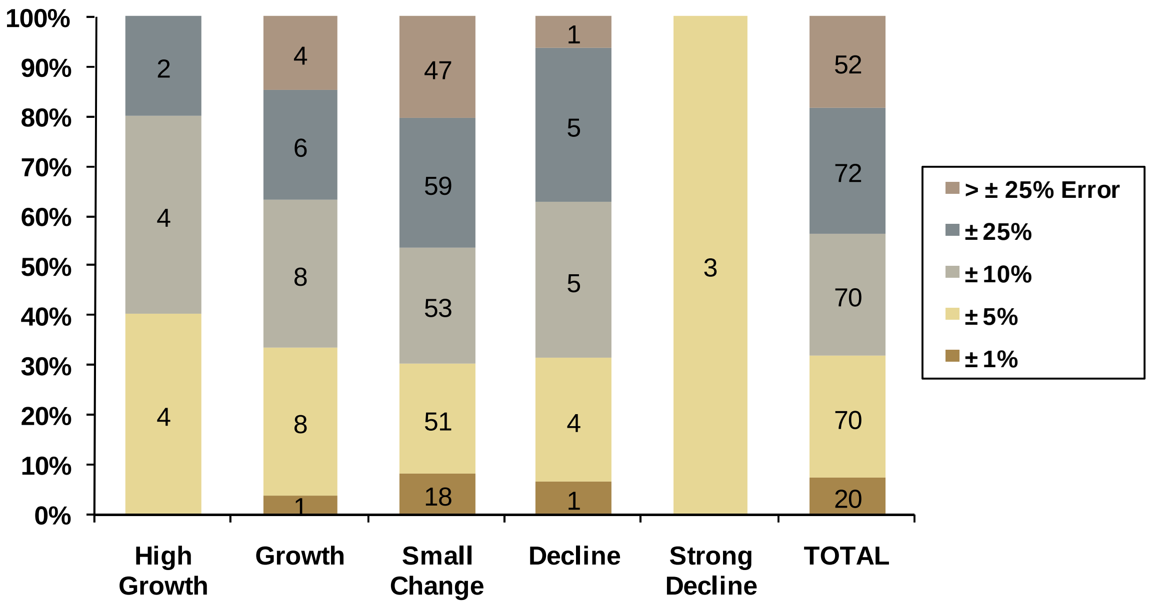
Exhibit 18 below illustrates error rates for the K Linear Cohort Survival method five years out for five different district growth categories. Projected enrollment for neither the Growth or High Growth districts were within ± 1% of actual enrollment. However, these two categories did have a somewhat higher proportion (over 3%) of districts within ± 5% of actual enrollment than Small Change or Decline districts.

The Small Change category had the highest proportion of districts with greater than ± 25% error rates, likely because this category includes a high proportion of Small and Very Small districts, which also show high error rates as noted above.

The Decline category had fewest districts with an error rate above ± 10%, while it had a similar percent of districts with an error rate at or below ± 5% as most of the other categories.

The Strong Decline category shows consistent accuracy within ± 5%; however, this category only includes three school districts.

Exhibit 18
Accuracy of K Linear Cohort Survival by District Growth Category, 5 Years Out



Source: OSPI, Berk & Associates, 2008.

Exhibit 19
Accuracy of K Linear Cohort Survival Method by District Size and Growth Category: Percent and Number of Districts Within ± 5% Error

	Large	Medium	Small	Very Small	Total
High Growth	4	0	-	-	**4**
Growth	6	3	0	-	**9**
Small Change	22	25	20	2	**69**
Decline	3	2	0	-	**5**
Strong Decline	3	-	-	-	**3**
Total	**38**	**30**	**20**	**2**	**90**

	Large	Medium	Small	Very Small	Total
High Growth	44%	0%	-	-	**40%**
Growth	67%	20%	0%	-	**33%**
Small Change	65%	41%	20%	6%	**30%**
Decline	60%	20%	0%	-	**31%**
Strong Decline	100%	-	-	-	**100%**
Total	**63%**	**34%**	**19%**	**6%**	**32%**

Source: OSPI, Berk & Associates, 2008.

Exhibit 19 above shows accuracy by district size and growth category. The table shows the percentage of districts within a combined category for which OSPI's current method would result in projections within ± 5% of actual enrollments five years out. Within the Large districts, accuracy is substantially less for High Growth districts than other growth categories.

In total, 32% of the State's districts would be projected within ± 5% of actual enrollments, the largest portion of these districts are Large districts. Only 19% of Small districts are projected within ± 5% of actual enrollments

4.0 DESCRIPTION OF OTHER METHODS

In addition to determining the accuracy of the K Linear Cohort Survival method, it was necessary to test the accuracy of other methods that OSPI could be using to project enrollment, both to compare the current method's relative effectiveness and to determine the most accurate method. This section describes the other methods that we tested, as well as how they came to be included in this analysis.

4.1 Determining What to Test

Other projection methods to test were identified through three main sources. First, the 1990 report was reviewed and methods that showed potential for accuracy were selected to be re-assessed. Second, other methods in use by districts in Washington and in other states were identified. Three school districts in Washington (Evergreen, Spokane, and Vancouver) were selected based on recommendations by the Work Group, and their methods were included in this analysis. In addition, the methods used in four states either comparable to Washington or known for innovative methodology (California, Colorado, Nevada, and Oregon) were reviewed.

4.2 Methods Used in Other States

California, Colorado, Nevada, and Oregon were selected for comparison due to their geographic proximity and growing K-12 populations. Interviews were conducted by phone or through email correspondence with members or heads of the departments in each state responsible for enrollment forecasting.

California

For operating budget purposes, enrollment projections in California are developed using a cohort survival method similar to OSPI's current method. A grade progression ratio is created by dividing the enrollment in one grade level by the enrollment in one lower grade from the previous year. This ratio represents the proportion of students expected to progress from one grade to the next.

The most likely progression model is chosen based on analysis of historical trends; knowledge of demographic characteristics of each county, such as recent population estimates, migration trends, or employment trends; and survey results from selected school districts. The best fitting progression ratios are chosen independently for the projection of each grade, including high school graduates. The state total by grade is the result of summation of the projections at the county level.

The main difference between California's method and OSPI's method is that California projects entering cohorts of kindergarteners and first graders using actual and projected births.

Colorado

K-12 public school enrollment in Colorado is projected annually using regression models. Colorado does not project enrollment separately by grade level, just total enrollment for each of the State's districts.

Colorado uses multi-variable regression models with dependent variables such as total and age-specific population projections, births, housing permits, migration trends, and employment projections. They then adjust the models based on insight from individual school districts about factors affecting enrollment trends, school reform efforts, or the local economy.

Although Colorado does not separate projections by grade level, they do project kindergarten enrollment separately using a regression model based more heavily on population projections and birth rates. Kindergarteners are forecasted separately because they are not full-day students, and therefore are funded separately from grades 1-12.

Nevada

Public school districts in Nevada may choose to use their own projection methodology, or may be assisted by the Nevada Department of Education. The following projection method describes the most widely used method, which is also used by the two largest districts in the State. Projections are made at the district level using the apportionment method for each grade level, and then aggregated into a state total.

To predict total district enrollment for the next school year, a district takes the current year's total K-12 enrollment and adds the difference between the current and last years' enrollments, then adds or subtracts an adjustment factor based on trending analysis. To calculate the enrollment for each grade level, the district takes the percentage of total students located in that grade level in the current year and applies it to the projected total enrollment for next year. For all the years that are projected, the current year proportions are used to create grade level projections.

Kindergarten enrollment is included in the above process, calculated by the apportionment method based on the total number of students enrolled in kindergarten in the current year.

Oregon

Projections of Oregon's enrollment are created using a cohort survival method. Projections are adjusted based on a number of factors, including multi-year trends, economic indicators, birthrates, and other growth factors.

K-12 grade level enrollment forecasts are based on the age-specific population forecasts created by the Oregon Office of Economic Analysis. These age-specific forecasts are created using the cohort survival method, but are also subject to projected birth, death, and migration rates based on historical data. Age-specific migration rates for Oregon counties were determined for each of the five-year periods from 1980-2000. Detailed census data from 1990 and 2000 were modified and used to reflect the recent net migration trend.

Kindergarten enrollment forecasts are done using multi-year trends, as well as recent birth rates. Birth rates are calculated by applying age-specific fertility rates to women in corresponding age groups.

Key Findings from Other States

Two of the four states interviewed (California and Oregon) use a version of the cohort survival method employed by OSPI. However, they augment their projections with analysis based on changing demographic trends to create more likely scenarios. Their methods are similar to this report's test of a linear trend including housing unit analysis.

California, Colorado, and Oregon all bring birth rates into their projections of kindergarten enrollment, although they calculate and use birth rates differently. California projects entering cohorts of kindergarteners (and first graders) using actual and projected births. Colorado has a separate regression model for kindergarten enrollment that is heavily weighted towards the variable of births. Meanwhile, Oregon uses multi-year trends to calculate kindergarten enrollment like OSPI, but factors in recent birth rates to adjust projections. This widespread use of births as a forecasting variable was the basis for testing a births-to-kindergarten ratio in this report.

4.3 Methods Used in Washington School Districts

In addition to examining methods used in other states, a number of school districts in Washington use different enrollment projection methods for determining facility needs and determining operational budgets for the upcoming year. The project work group identified several school districts that use other methods, and administrators at three of these districts were interviewed to gather more details on their projection methods.

Evergreen School District

The Evergreen School District in Vancouver uses a blended method that incorporates OSPI's cohort survival method and factors in independent population projections and residential building permits for its projections. District employees work with the local planning department to track residential development in the district, and a consultant does the population projection.

The district changed methods after it found the cohort survival method was overestimating enrollments as a result of the increasing growth the district was experiencing. The new method does a better job of capturing variations from the previous year's trends. However, with the downturn in the housing market, builders are not actually building what has been permitted. As a result, projections for the upcoming year will probably be higher than actual enrollment.

Spokane School District

The Spokane School District uses a modified five-year cohort survival method. The grade progression ratios for the last five years are weighted so the most recent year is the most heavily weighted. The district also incorporates residential development, not building permits, into the projection method. Kindergarten enrollment is projected separately and uses the number of births five years earlier.

The district uses its method for determining the operational budget and staffing needs for the upcoming year. The district has found that the method is quite accurate for short-term district-wide enrollment projections. Currently, the district has had declining enrollment. It recently commissioned a long-term enrollment projection study to better understand the impact of declining enrollment on facility needs.

Vancouver School District

The Vancouver School District uses two different methods for different purposes. It uses the cohort survival method to determine business and staffing needs, and contracts with a consultant for a detailed demographic analysis and enrollment projections based upon an econometric model. The econometric model incorporates Census data, population age data, job growth, building permit data, and birth rates. Kindergarten projections are based on the history of births and the population of women at childbearing age. This method has been accurate in the short term and fairly accurate for the long-term as well. Currently, the district is experiencing stable growth.

Key Findings from School Districts

All three of the above school districts have modified the cohort survival method to obtain an enrollment projection that better meets their needs. In the three cases, a residential development factor was used to account for new residents in the district that would not have been captured using historical trend data. Additionally, data related to the number of births in the district was used to account for potential new students entering into the school system. For each district, the modifications to the cohort survival method did seem to improve the projection methods performance in the short-term.

4.4 Others

Washington State Caseload Forecast Council

The Washington State Caseload Forecast Council does state-wide grade projections for the State's annual operating budget allocations. The council uses a cohort survival method to project enrollments for grades two through twelve. Projections for grades two through eight are modified using a regression model to increase accuracy. Variables used in the model include net migration, private school crossover, and employment forecasts. The council does projections for kindergarten and grade one using a dynamic regression model, which factors in births for the previous five or six years, kindergarten enrollment, and net annual migration in grades two to twelve for the last five or six years.

The projections are for the next two or three years, and the two methods are quite accurate state-wide, with an average error of only about 200 students. They are less accurate at the school district level, however. This is due to more variation in housing development and population growth.

4.5 Methods to Test

Based on the findings described above, the following methods were identified for comparative testing.

Births-to-Kindergarten Ratio

In lieu of a K linear trend, a births-to-kindergarten ratio was considered to project kindergarten enrollments. The number of kindergarteners enrolled in a school district was compared to the number of births in the county five years prior. County births were used instead of district births because sub-county data are not available in many areas. Where available, the number of births within the district five years prior would be the preferable measure to create this ratio.

Housing Unit Adjustments

A second technique that was identified was the use of a housing unit adjustment on enrollment projections. As housing is often a proxy for growth and can significantly impact public school enrollments, enrollment projections were adjusted to account for housing growth trends that were higher or lower than the housing unit growth a district experienced in the historical period.

Other Ways of Averaging

In addition to the substantial adjustments in methodology required by the births and housing unit analysis described above, different methods of averaging cohort survival rates to arrive at the grade progression used were explored. For each of the four primary methods tested (including OSPI's current method), three different types of averages were used to determined the grade progression rate. Ultimately, twelve different tests were executed for each district in Washington. The types of average used are discussed below. The current OSPI method uses a three- or five-year average to determine a cohort survival ratio, depending on the growth rate of the district.

Five-Year Average. A five-year average takes six years of historical and calculates grade progressions between each of those years, resulting in five data points. Those data points are averaged to determine the grade progression rate that should be used for the projection period.

Three-Year Average. A three-year average takes four years of historical and calculates grade progressions between each of those years, resulting in three data points. Those data points are averaged to determine the grade progression rate that should be used for the projection period. Relative to the five-year average, a three-year average places more emphasis on recent data for projections. Theoretically, there is little basis to do this, unless one is certain recent trends will continue.

Five-Year Weighted Average. A five-year weighted average takes six years of historical and calculates grade progressions between each of those years, resulting in five data points. Those data points are averaged to determine the grade progression rate, but recent years are weighted more heavily than past years. This fundamentally has the same effect as a three-year average though some additional time periods are considered.

Results of testing these different types of averages were inconclusive. Depending on the test or on the size/growth categories of the districts, there were instances in which each of the average was the best option, and those instances were evenly distributed. One consistent finding was that a three-year average worked best for High Growth districts in all tests. This is likely because the recent past showed higher growth generally than a five-year history, and a three-year average resulted in higher projections all around. Because only one time period was tested, it is unclear if a three-year average would always work best for High Growth districts. It is unlikely to be the case.

By district size, three-year averages were slightly better for Large and Small districts while five-year average were slightly better for Medium and Very Small districts. It is important to note that varying the method of averaging grade progression had a very small impact overall (less than 1% change in average error rates).

Differences Versus Ratios. Instead of using a ratio to project cohort survival, it can be more effective to use a nominal difference between grade levels, especially in smaller districts where small fluctuations can lead to large changes in percentages, leading to excessively large or small grade level progression ratios. This method was applied to the Small and Very Small districts during testing to see if it resulted in improvement of the projection. We found that there was an insignificant change in error rates using differences versus ratios for Small districts.

Regression Analysis

Regression analysis is a well known method of projecting enrollment and is used by the Washington State Forecast Council to project total state-wide enrollments for operating budget purposes. It was not tested in this report for two main reasons. First, using a regression model would be significantly more complicated than the current methodology and the tested alternatives. It would be more labor-intensive and require a higher degree of technical knowledge for users. Secondly, using a regression analysis model would reduce transparency between users, policy-makers, and the public. Results could be modified based upon the input variables chosen and are not easily replicable.

The 1990 report reached a similar conclusion around regression analyses and did not test this method. The cost and level of complication does not lend itself well to having the State run multiple forecasts for districts applying for construction assistance funding.

5.0 COMPARATIVE ASSESSMENT

5.1 Births-to-Kindergarten Ratio

An important assumption in the cohort survival model concerns the size of future kindergarten classes. Currently, OSPI assumes that the recent trend in kindergarten enrollments will continue. This is the K linear approach, which is problematic when kindergarten enrollments fluctuate. If the number of kindergarteners increases for several years, drops, and then increases again, forecasts are less accurate than when the enrollment trend is constant.

State Trends

In Washington, actual aggregate state-wide

How to Use a Births-to-Kindergarten Ratio to Calculate Kindergarten Enrollments:

1. For the six years prior to the projection period, determine actual annual kindergarten enrollments.
2. Collect six years of live birth data at the county level (or smaller geographic area, if available) that correspond to the timeframe five years prior to the actual kindergarten enrollments collected in step 1,
3. For each year of actual kindergarten enrollments, divide the enrollments by the number of live births five years prior. This is the B/K ratio.
4. Take the average of the B/K ratios calculated this way.
5. Collect live births data for each of the five years prior to the projection period.
6. Multiply the annual live births number by the ratio calculated in step 4 above. This results in a kindergarten projection for the year five years following the live births.

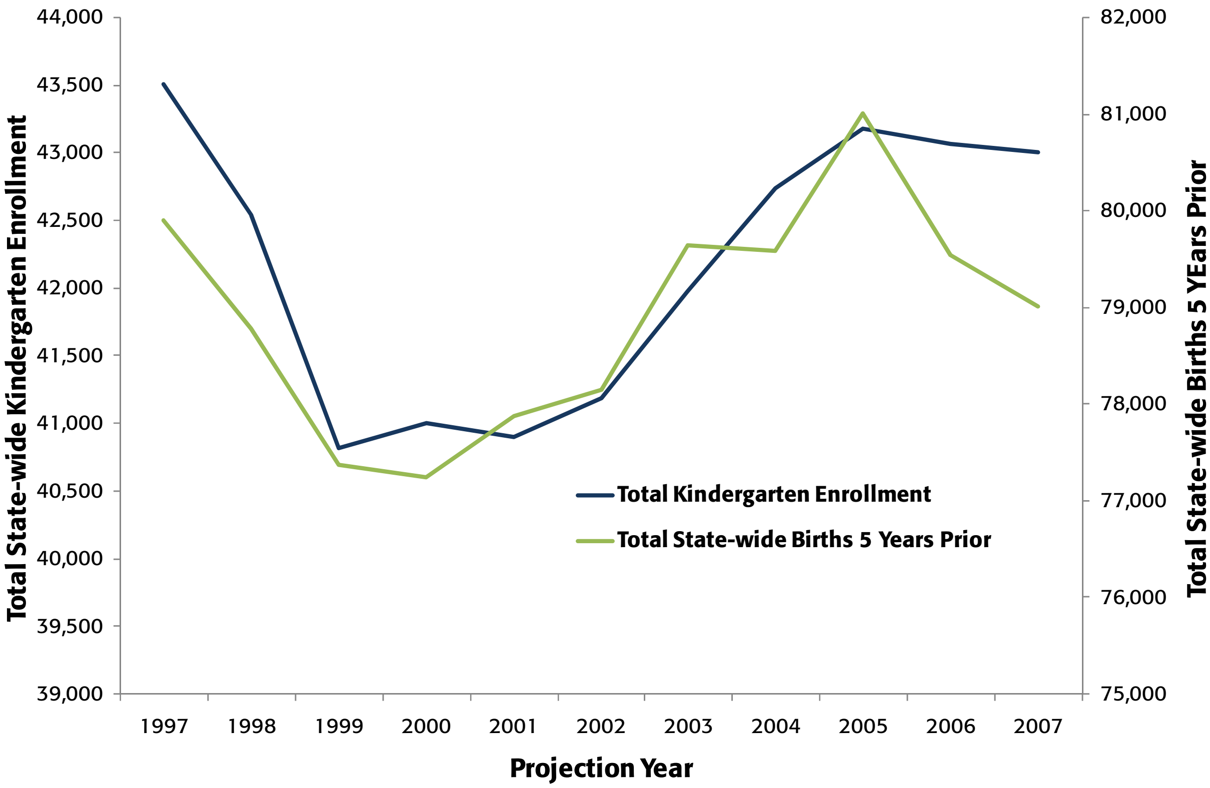
kindergarten enrollments declined between 1997 and 2002, and then increased between 2003 and 2007 (as shown in **Exhibit 20**). A forecast made in 2002 using the K linear approach and the 1997-2002 kindergarten enrollment trend would have underestimated enrollments by 3%. This compares to an underestimate of only 0.1% when births were used to forecast kindergarten enrollments.

We illustrate the importance of using births to forecast kindergarten enrollments with Washington birth and enrollment data. **Exhibit 20** shows actual kindergarten enrollments and state-wide birth data from a time period five years prior, to account for the delay between birth and kindergarten enrollment.

As the charts show, trends in kindergarten enrollments resemble birth trends fairly closely. Births are a much better predictor of future kindergarten enrollment than the past kindergarten trend, at least on a state-wide basis. When the kindergarten trend is constant, it does not matter which method is used. However, when the number of kindergarteners increases or decreases for several years, it is important to use births to forecast enrollments, not the past trend.

We recommend that OSPI use a different approach to forecast kindergarten enrollments, using information about the number of recent births. The number of births signals the level of kindergarten enrollments five years later. A cohort survival method that uses the past relationship between births and subsequent kindergarten enrollments can be used to forecast kindergarten enrollments five years in the future. **Attachment D** compares kindergarten projections using the births-to-kindergarten and cohort survival methods for all school districts in the State.

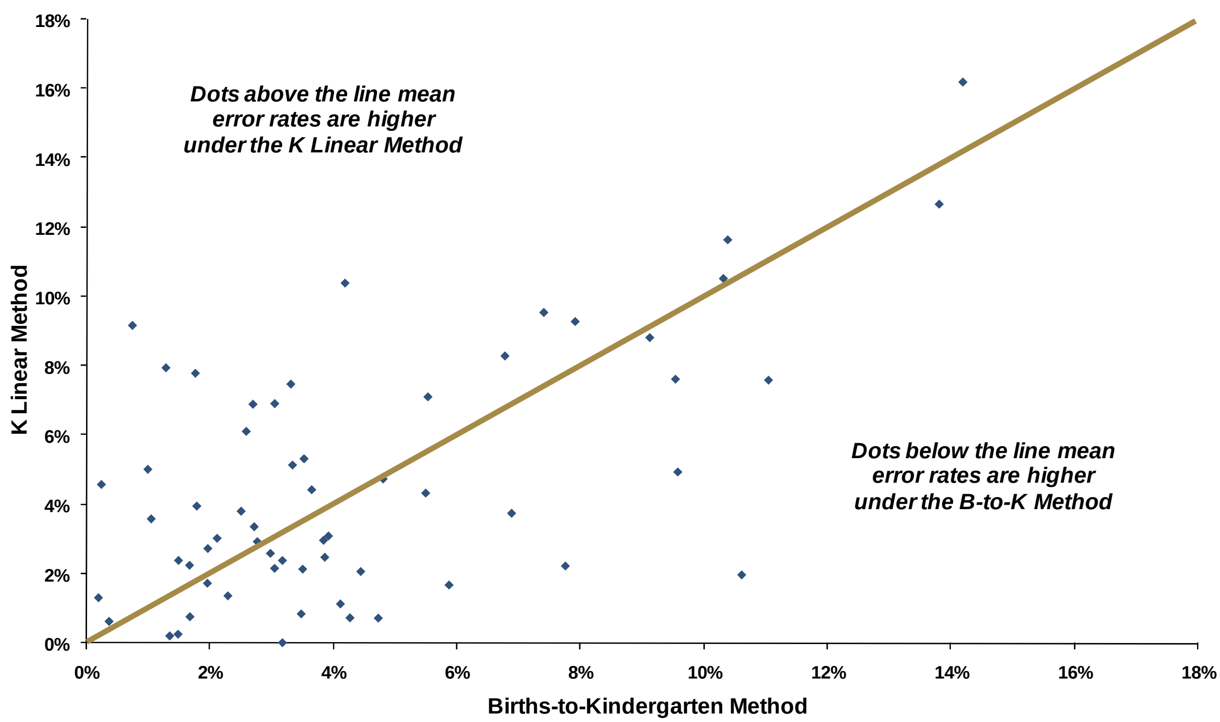
Exhibit 20
Washington State Kindergarten Enrollments and Births 5 Years Prior



Analysis of Error by District Size Categories

Large Districts. 31 of 60 total Large districts did better under the births-to-kindergarten method; 29 did better under the K linear. If we sum up all the error rates (their absolute values), the K linear method has 278 percentages of error, compared to 264 percentages for the births-to-kindergarten method. So in both measures, the births-to-kindergarten method gives only slightly better results for Large districts.

Exhibit 21
Comparison: K Linear to Births-to-Kindergarten, Large Districts



Source: Lapkoff & Gobalet, 2008

In examining error rates, ± 10% was the cut-off used to identify anomalies. Two large districts, Tahoma and Snoqualmie Valley, were *underestimated* beyond this threshold. Both districts were underestimated by 14%.

It is unclear precisely why these districts have high error rates. The following observations may be contributing factors:

- Both are High Growth districts.
- K linear did not improve projections for either district significantly. It did slightly better for one of them (13%) and worse for the other (16%).

- Both districts had high housing growth (annual averages of 4% and 5%). Accounting for housing growth did not help – in fact it made the error slightly higher (15%). This must be a result of higher housing growth during the 2000-03 period than during the 2004-07 period.

- Both districts are in King County. Excluding these two districts, the other King County districts were also underestimated, but by only 2%.

With error rates of +11%, two Large districts, Stanwood and Bremerton, were *overestimated* by more than the 10% threshold.

It is unclear precisely why these districts have high error rates. The following observations may be contributing factors:

- Bremerton was in Strong Decline; Stanwood was in Small Change

- Both did substantially better under the K linear approach, which tends to result in forecasts lower than under the births-to-kindergarten approach for the time period examined

- Stanwood had high housing growth (3%) and adjusting for housing growth did not help.

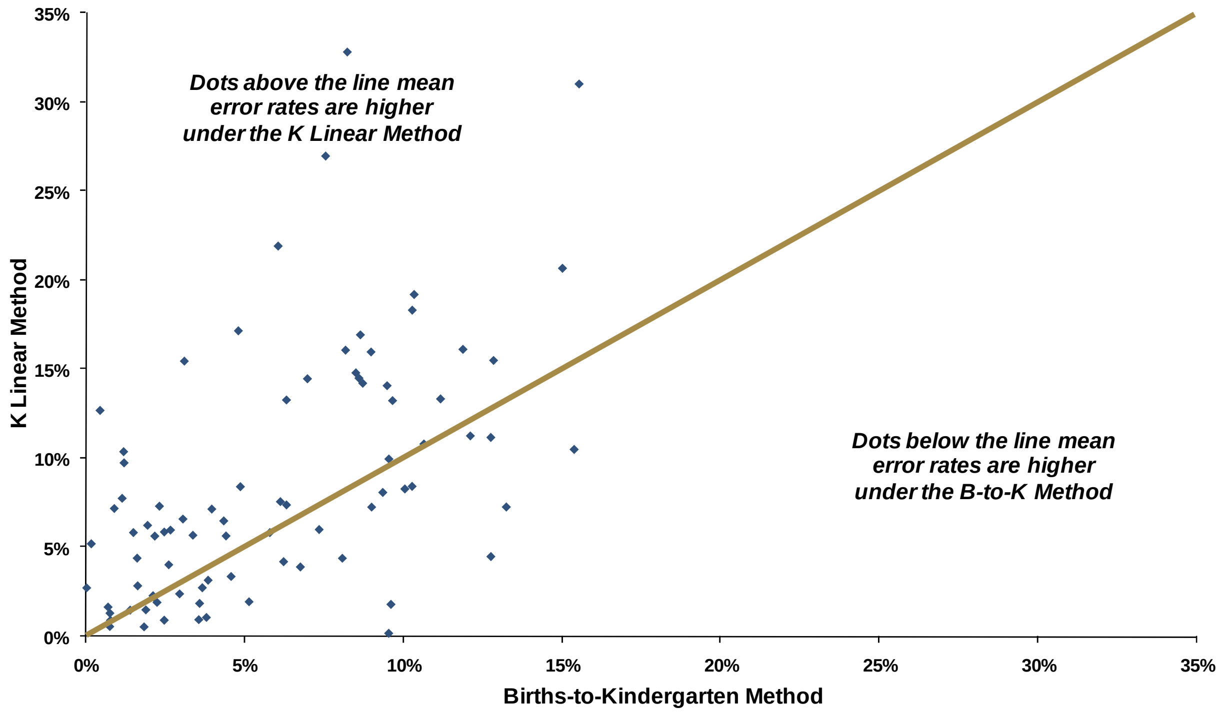
- Stanwood is in Snohomish County; Bremerton is in Kitsap County.

Medium Districts. We have defined districts as medium-sized if they have enrollments between 1,000 and 5,000 students. After excluding the districts with a large number of online learners and districts with no data, there are 84 Medium districts.

55 of the 84 districts did better under the births-to-kindergarten method; 29 did better under the K linear method. If we sum up all the error rates (their absolute values), the K linear method has 728 percentages of error, compared to 505 percentages for the births-to-kindergarten method. So in both measures, the births-to-kindergarten method gives substantially better results.

As **Exhibit 22** shows, there are some districts with quite large outliers under the K linear approach. This was not the case using the births-to-kindergarten method.

Exhibit 22
Comparison: K Linear to Births-to-Kindergarten, Medium Districts



Source: Lapkoff & Gobalet, 2008

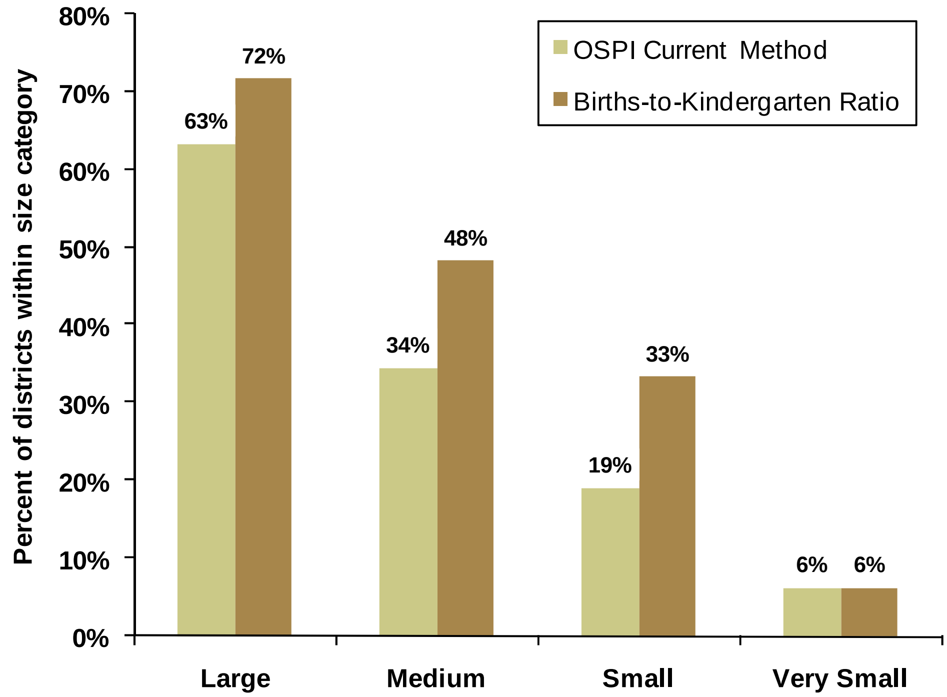
Seven Medium districts were *underestimated* by more than 10% under the births-to-kindergarten method (that is, the births-to-kindergarten projection was lower than actual enrollments). These districts are Okanogan, East Valley (YAK), Cheney, Montesano, Coupeville, La Center, and Cashmere. Four districts were in Small Change, while three were Growth districts. During this time period, almost all the districts did even worse under the K linear approach, since this method usually gives even lower projections than using births to forecast enrollments. The housing adjustment improved three of these seven outlier districts.

Five districts were *overestimated* by more than 10% by the births-to-kindergarten method (that is, the births-to-kindergarten projection showed more students than actually occurred). These districts are Naches Valley, Sultan, Mount Baker, Chewelah, and Granite Falls. All but one district, Naches Valley, did much better under K linear, as expected; K linear almost always gives lower results. Housing growth adjustment did not help. Three of the districts had a small change in enrollment; two districts, Mount Baker and Chewelah, had declining enrollments.

Comparative Assessment by District Size Categories

Using a different method to compare the births-to-kindergarten and K linear, as shown in **Exhibit 23**, the births-to-kindergarten method is a better predictor of kindergarten enrollments than K linear. The Medium and Small categories saw the largest improvement with difference of 14%. The exception is the Very Small category, where only 6% of school districts were within an error rate of ± 5% for each method.

Exhibit 23
Districts within ± 5% Difference from Actual, by District Size Category

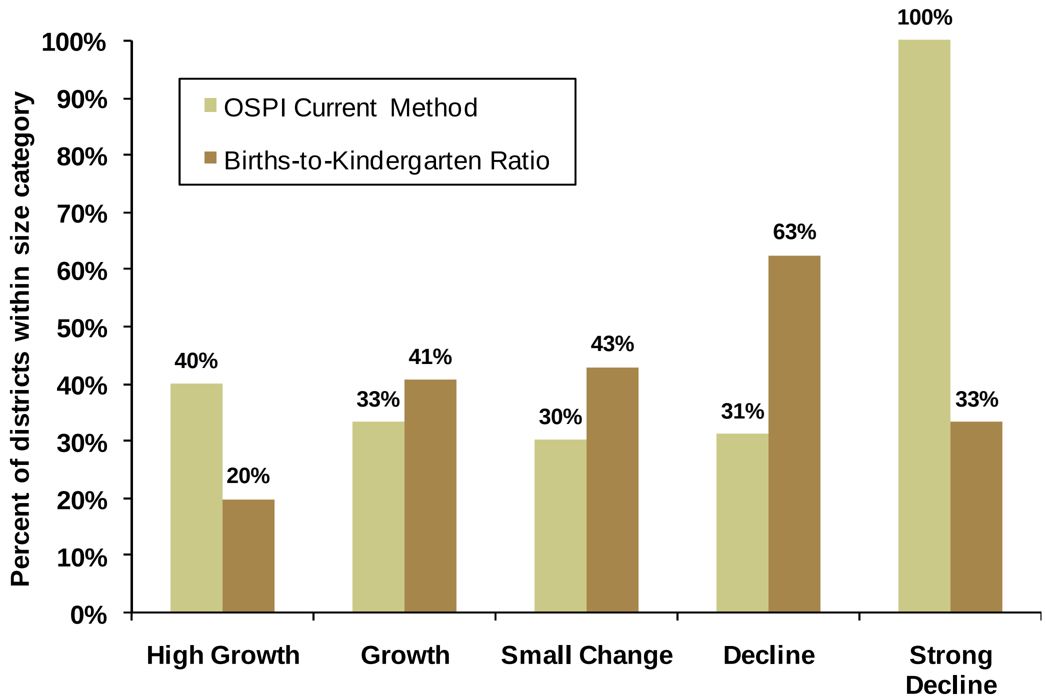


Source: DOH, OSPI, Berk & Associates, 2008.

Comparative Assessment by District Growth Categories

As shown in **Exhibit 24**, the births-to-kindergarten method did not perform as well for districts experiencing the most rapid change in enrollment. For both the High Growth and Strong Decline districts, the births-to-kindergarten method was considerably less accurate. This is likely because county, rather than district, births are used, which may not reflect the birth rates of the population of the school district. The births-to-kindergarten method performed better for those districts experiencing more moderate or little growth. It should also be noted that only three districts are included in the Strong Decline category.

Exhibit 24
Districts within ± 5% Difference from Actual, by District Growth Category



Source: DOH, OSPI, Berk & Associates, 2008.

5.2 Housing Unit Adjustments

As housing units are often a proxy for growth, a housing unit adjustment was also tested in conjunction with OSPI's current method and a method that relies on births-to-kindergarten ratios.

To implement a housing unit adjustment, a baseline housing unit growth rate by school district was determined by averaging the Office of Financial Management's (OFM) annual housing unit totals from 2000 through 2002. For each year from 2003 through 2007, actual housing unit growth in each district was compared to that district's baseline. In years when housing unit growth was higher than the baseline, total district enrollments were adjusted upwards by a factor. In years when housing unit growth was lower than average, total district enrollments were adjusted downwards by a factor.

The specific enrollment adjustment factor for each district was determined by applying a yield factor to the difference in housing units. The yield factor is intended to indicate how many public school students a housing development yields. For the purposes of this study, we assuming assumed ten single family units result in seven new students. Ten multifamily units yield four students, and ten mobile home units yield six students. These assumptions are based on industry standards.

How to Calculate the Housing Unit (HU) Adjustment:

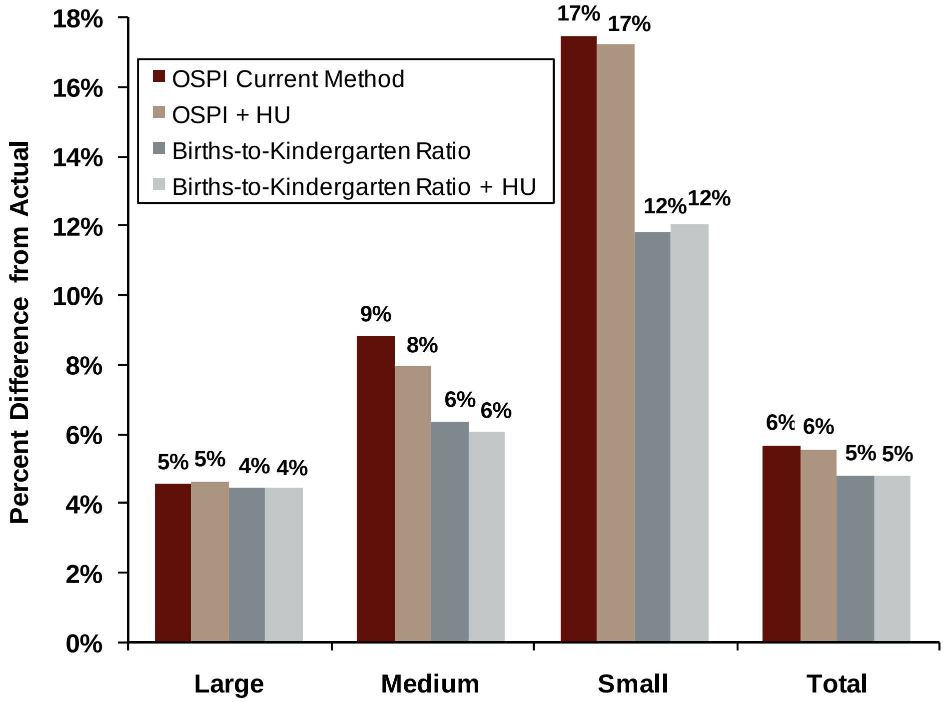
1. For the period five years prior to the projection period, determine annual new HU by type.
2. Calculate average annual number of new HU by type (straight average)
3. Determine annual expected new housing units by type for the five-year projection period (using building permit data)
4. Calculate the difference between expected new HU and average annual HU for each year in the projection period
5. Multiply a yield factor (0.7 for single family units, 0.3 for multifamily units) by the number calculated in step 4 above. This is the total number of additional students to be added to the projections. (They can be evenly spread amongst grade spans or weighted more heavily into earlier grades)

To determine the yield factor, we examined county housing unit growth by type at the county level (as this data was not available at the district level). Based on the portion of housing growth that was attributable to different housing types, a blended yield factor was calculated for each county and used for the districts located within that county. The blended yield factors ranged between 0.5 and 0.7, depending on the particular district's mix of single- and multifamily housing unit growth.

Exhibit 25 and **Exhibit 26** below show that housing unit adjustments for both OSPI's current method and the births-to-kindergarten method have only a small impact (sometimes positive and sometimes negative) on the projection method's error rate. In the case of all three district size categories, using a births-to-kindergarten method resulted in a lower error rate, but the addition of housing unit adjustment did little to improve the projections accuracy.

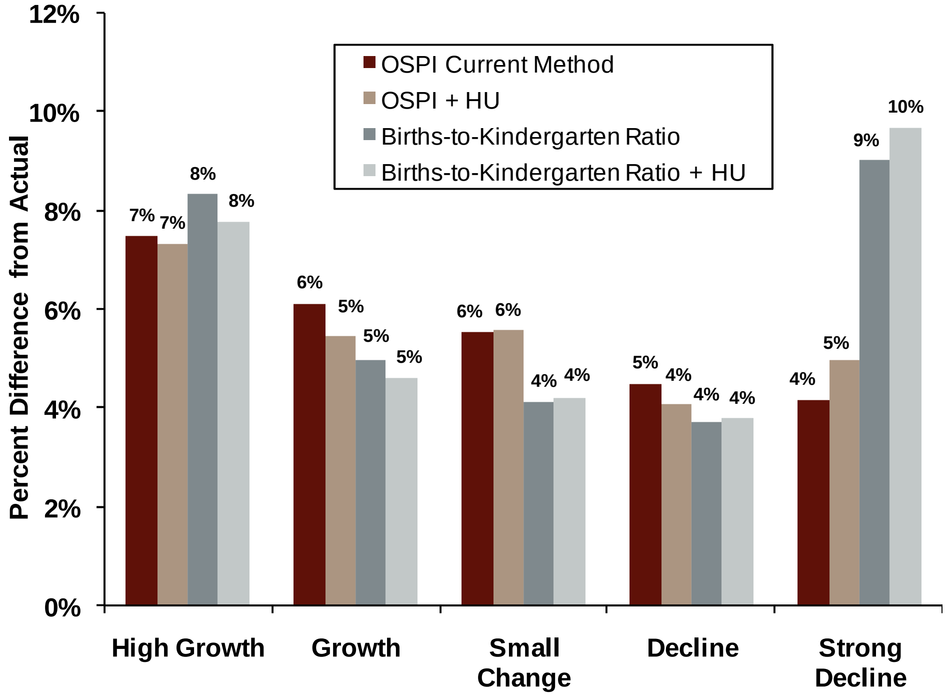
For the growth categories, the use of a housing unit adjustment again only slightly impacted the projection methods accuracy. In some instances it slightly improved the error rates and in others it increased the error rate. High Growth and Growth districts, which comprise about 26% of the State's total K-12 enrollment, saw a small increase in accuracy of 0.1% and 0.3%, respectively. The Small Change, Decline, and Strong Decline categories each had small increases in their error rate.

Exhibit 25
Error Rates by Enrollment Projection Method and District Size Category



Source: OFM, DOH, OSPI, Berk & Associates, 2008.

Exhibit 26
Error Rates by Enrollment Projection Method and District Growth Category



Source: OFM, DOH, OSPI, Berk & Associates, 2008.

Challenges with the Housing Unit Adjustment

The housing adjustment has only a minor effect on the accuracy of the projections. There are both simple and more complex reasons for this.

The simplest reason is that the housing adjustment only affects the projection if a district has had or will have substantial housing growth. Because most school districts have little or no housing growth, the housing adjustment is close to zero in most cases.

For districts with substantial housing growth, there are several factors that affect the accuracy of the adjustment. The first is a data issue. Only the number of units of housing growth are available by district, not the type of housing. This is unfortunate because the impact of housing on school enrollments depends strongly on the type of housing built. Family-oriented housing, such as houses and subsidized housing, tend to contain many more students per unit than condominiums, senior housing, and other housing oriented to single-person households. This means that the housing adjustment may be inaccurate because the number of students per unit assumed for the projection is too high or too low.

The second reason that the housing adjustment may be a poor predictor of enrollment growth (at least, in our experiment) concerns the assumed timing of enrollment growth. While enrollments increase as soon as a new development is occupied, they usually peak about five to ten years after occupancy. In a detailed forecast for a particular district, this time trend could be accounted for.

Specific developments can be modeled: for example, enrollments from housing built last year can be modeled to begin rising, peaking, then falling. Meanwhile, enrollments from housing built 10 years earlier can be modeled to begin declining. Such detailed projection techniques are not possible for all Washington school districts, partly because housing data are available only since 2000. Perhaps a more sophisticated approach could be tested in 2015 or so, when a longer time series of housing data is available.

Despite these shortcomings, we recommend that some sort of housing adjustment be made available to districts. Substantial housing growth will cause enrollments to increase, even if the timing is not clear. Such growth may not be accounted for in the cohort survival method, and it is necessary to some adjustment available.

6.0 FINDINGS AND RECOMMENDATIONS

6.1 Key Findings

Projections using OSPI's current method were more accurate for larger districts than smaller districts. Over 60% of districts in the large size category had an error rate at or less than ± 5%. Comparatively, the smaller the size category, the smaller the percent of districts at or less than ± 5% error rate became. This pattern was consistent for other projection methods as well.

OSPI's current method is more accurate in projecting short-term enrollment than long-term enrollment. One year out, over 75% of school districts had an error rate at or below ± 5%. Each additional year the method projects out, the accuracy of the method is progressively worse. This is likely to be the case for all enrollment projection methods.

For large districts, even a low error rate at or below ± 5% is a large number of students. These students could mean a difference of several classrooms when planning for school facilities.

There are tradeoffs in time and accuracy between incorporating local knowledge and data and using a more straightforward method. Several school districts use their own econometric projection method, drawing upon local data sources, to get more accurate enrollment projections. For OSPI's purpose, these types of methods would be too time intensive, involving much data gathering and analysis.

The births-to-kindergarten method is more accurate at projecting kindergarten enrollment than the K linear method. This is true for Large, Medium, and Small districts, as the method is able to capture variation in enrollment the K linear method cannot.

In most cases, the addition of a housing unit adjustment did not increase the projection's accuracy. This could be a factor of only analyzing one time period. Furthermore, the high growth and growth categories did see small improvements in accuracy.

High online learning enrollments negatively affected the accuracy of projections. Given the recent set up of online learning programs, grade progressions based on historical inputs had not accounted for these enrollments. District historic enrollments for the purposes of SCAGP should exclude online FTEs.

6.2 Recommendations

OSPI's current method of projecting school enrollments for the purposes of SCAGP works relatively well. This analysis found that accuracy of projections could be improved marginally by making a couple of adjustments to the projection methodology being used. While feasibility of implementation was a consideration in developing the recommendations, no assessment of existing data collection, management, and reporting systems was undertaken. To the extent that these recommendations could pose implementation challenges, OSPI should re-evaluate the benefits of the proposed modifications relative to implementation costs, and consider timing implementation with other systems upgrades.

Based upon the analysis in this report, OSPI should consider the following adjustments to its methodology for forecasting enrollments.

Use Births Data instead of K Linear. OSPI should consider a births-to-kindergarten ratio instead of a linear trend to predict kindergarten enrollments. This method will be more accurate when districts are allowed to use local, rather than county, data where available.

Optional Housing Unit Adjustment. OSPI should consider giving high growth and growth districts (or other districts expecting uncharacteristically high housing growth) the option of including a housing unit adjustment in their enrollment projections. To the extent that the district can provide six years of historical data on housing unit development by type as well as five years of projected new annual housing units (as determined by permit or other data and approved by the relevant agency) showing increasing housing trends, OSPI can incorporate an adjustment as described above into the enrollment projections. Given that this is a more labor intensive approach and includes a local data source it should be optional and only considered for growth districts.

Small Districts. Given that all enrollment projection methods tested were fairly unreliable (average error rates in excess of 12%) for districts with less than 1,000 students, OSPI might want to consider and adjustment to the SCAGP funding formula that does not use enrollment projections by grade level as a direct input. This would pertain to small districts only. The existing small high school formula, which specifies building square foot needs for high schools with enrollments of 1-400 students, could be a good model to apply to at the district level. To do so, the State would need to determine appropriate square foot allocations for small school districts. The recent *K-12 School Construction Funding Formula Transparency Study* includes a recommendation that the State commission a study to determine average square foot space needs by grade span, and recommended square foot allocations for small districts should be included as part of that study.

Online Learning. OSPI should use district enrollment numbers which have been adjusted to exclude online only students when projecting future enrollments for the purposes of SCAGP.

ATTACHMENT A
List of Stakeholders Interviewed

LIST OF STAKEHOLDERS INTERVIEWED

Washington State School Districts

Identified by Work Group

Todd Horenstein, Assistant Superintendent, Vancouver School District
Craig Numata, Spokane Public Schools
Reg Martinson, Executive Director, Evergreen School District

High Online Learning Enrollments

Penny Jackson, Steilacoom School District
Teri Hurn, Quillayute Valley School District

Other States

Gary Horton, Distributive School District Administrator, Nevada Department of Education
Brian Reeder, Oregon Department of Education
Jason Schrock, Colorado Legislative Council
Linda Von Rotz, Demographic Research Unit, California Department of Finance

Washington State Caseload Forecast Council

John Steiger, Deputy Director, Caseload Forecast Council

Office of Financial Management

Theresa Lowe, State Chief Demographer
Kyle Reese-Cassel, GIS – Demographer, Forecasting Division

Note: Additional stakeholders were contacted during outreach for the *K-12 School Construction Funding Formula Transparency Study*. All stakeholders were asked if they had any thoughts or concerns about enrollment projection. For a complete list of those stakeholders, see Attachment C of the October 1, 2008 *K-12 School Construction Funding Formula Transparency Study*.

ATTACHMENT B

Stakeholder Interview Questions

OSPI ENROLLMENT PROJECTION METHODOLOGIES

Questions for School Districts and Other States

1. What enrollment projection method does your school district currently use?

2. What is the reason for doing enrollment projections? (e.g. facilities planning, operational budget, etc.)

3. Who does the projections? (school district employee, consultant, other)

4. What is working well with your current projection method?

5. Are there problems with the current projection method, or times when the projections do not work well?

6. Have you used a different projection method in the recent past?

7. If so, what is the reason you change methods?

8. Are there any reports or studies that you know of evaluating enrollment projections for your school district?

9. Would you say your school district is experiencing high growth?

10. How would you define a high growth school district?

11. Are there other people you suggest we talk to for more information?

ATTACHMENT C

Five-year Error Rates by Method and by District

District Name	County	Distict Size	Growth Category	2007 Total Actual Enrollments	K Linear Cohort Survival (5-yr Average)		Cohort Survival with Births to K		Cohort Survival with Births to K with Housing Adjustment		K Linear Cohort Survival with Housing Adjustment	
					2007 Projection	*Diff from Actual*	*2007 Projection*	*Diff from Actual*	*2007 Projection*	*Diff from Actual*	*2007 Projection*	*Diff from Actual*
ABERDEEN	Grays Harbor	Medium	Decline	3,534	4,047	15%	3,837	9%	3,822	8%	4,032	14%
ADNA	Lewis	Small	Small Change	585	550	-6%	557	-5%	553	-6%	546	-7%
ALMIRA	Lincoln	Very Small	Small Change	100	78	-22%	65	-35%	64	-36%	78	-22%
ANACORTES	Skagit	Medium	Small Change	2,944	2,916	-1%	3,016	2%	3,078	5%	2,978	1%
ARLINGTON	Snohomish	Large	Small Change	5,495	5,658	3%	5,706	4%	5,673	3%	5,625	2%
ASOTIN-ANATONE	Asotin	Small	Small Change	581	483	-17%	539	-7%	543	-7%	487	-16%
AUBURN	King	Large	Growth	14,437	13,380	-7%	13,602	-6%	13,526	-6%	13,304	-8%
BAINBRIDGE ISLAND	Kitsap	Medium	Small Change	4,044	4,068	1%	4,073	1%	4,172	3%	4,166	3%
BATTLE GROUND	Clark	Large	Growth	13,177	12,674	-4%	12,847	-3%	12,733	-3%	12,560	-5%
BELLEVUE	King	Large	Growth	16,602	15,420	-7%	15,683	-6%	15,494	-7%	15,231	-8%
BELLINGHAM	Whatcom	Large	Small Change	10,735	9,931	-7%	10,379	-3%	10,511	-2%	10,063	-6%
BETHEL	Pierce	Large	Growth	17,668	17,047	-4%	17,187	-3%	17,291	-2%	17,151	-3%
BICKLETON	Klickitat	Very Small	Small Change	105	72	-31%	89	-15%	93	-11%	76	-28%
BLAINE	Whatcom	Medium	Small Change	2,245	1,884	-16%	2,062	-8%	2,154	-4%	1,976	-12%
BOISTFORT	Lewis	Very Small	Small Change	74	76	2%	89	20%	87	18%	74	0%
BREMERTON	Kitsap	Large	Strong Decline	5,058	5,158	2%	5,595	11%	5,618	11%	5,181	2%
BREWSTER	Okanogan	Small	Small Change	878	910	4%	1,044	19%	1,041	19%	908	3%
BRIDGEPORT	Douglas	Small	Small Change	707	505	-29%	566	-20%	567	-20%	505	-29%
BRINNON	Jefferson	Very Small	Small Change	45	29	-36%	52	15%	58	30%	36	-21%
BURLINGTON-EDISON	Skagit	Medium	Growth	3,954	3,730	-6%	3,869	-2%	3,889	-2%	3,750	-5%
CAMAS	Clark	Large	High Growth	5,646	5,401	-4%	5,336	-5%	5,296	-6%	5,362	-5%
CAPE FLATTERY	Clallam	Small	Small Change	467	502	7%	461	-1%	463	-1%	504	8%
CARBONADO	Pierce	Small	Small Change	182	137	-25%	173	-5%	170	-6%	134	-26%
CASCADE	Chelan	Medium	Small Change	1,333	1,237	-7%	1,280	-4%	1,313	-1%	1,270	-5%
CASHMERE	Chelan	Medium	Small Change	1,482	1,284	-13%	1,317	-11%	1,312	-11%	1,279	-14%
CASTLE ROCK	Cowlitz	Medium	Small Change	1,376	1,353	-2%	1,385	1%	1,394	1%	1,362	-1%
CENTERVILLE	Klickitat	Very Small	Small Change	92	84	-8%	86	-7%	87	-5%	86	-7%
CENTRAL KITSAP	Kitsap	Large	Decline	12,128	12,051	-1%	12,173	0%	12,188	0%	12,067	-1%
CENTRAL VALLEY	Spokane	Large	High Growth	12,337	11,396	-8%	11,160	-10%	11,145	-10%	11,381	-8%
CENTRALIA	Lewis	Medium	Small Change	3,457	3,529	2%	3,428	-1%	3,423	-1%	3,523	2%
CHEHALIS	Lewis	Medium	Growth	2,944	2,887	-2%	2,891	-2%	2,955	0%	2,952	0%
CHENEY	Spokane	Medium	Growth	3,709	3,134	-16%	3,234	-13%	3,421	-8%	3,322	-10%
CHEWELAH	Stevens	Medium	Decline	1,077	1,190	11%	1,242	15%	1,252	16%	1,200	11%
CHIMACUM	Jefferson	Medium	Decline	1,161	962	-17%	1,106	-5%	1,119	-4%	975	-16%
CLARKSTON	Asotin	Medium	Small Change	2,672	2,276	-15%	2,446	-8%	2,491	-7%	2,322	-13%
CLE ELUM-ROSLYN	Kittitas	Small	Small Change	930	948	2%	1,014	9%	1,110	19%	1,045	12%
CLOVER PARK	Pierce	Large	Decline	12,018	12,286	2%	12,950	8%	12,859	7%	12,195	1%
COLFAX	Whitman	Small	Small Change	681	653	-4%	677	-1%	677	-1%	653	-4%
COLLEGE PLACE	Walla Walla	Small	Small Change	812	757	-7%	766	-6%	771	-5%	763	-6%
COLTON	Whitman	Small	Small Change	189	217	15%	238	26%	237	26%	216	14%
COLUMBIA (STEVENS)	Stevens	Small	Small Change	200	184	-8%	213	6%	214	7%	185	-8%
COLUMBIA (WALLA WALLA)	Walla Walla	Small	Small Change	965	940	-3%	952	-1%	941	-3%	928	-4%
COLVILLE	Stevens	Medium	Small Change	2,097	2,039	-3%	2,097	0%	2,098	0%	2,040	-3%
CONCRETE	Skagit	Small	Small Change	732	450	-39%	739	1%	742	1%	454	-38%
CONWAY	Skagit	Small	Small Change	445	381	-14%	422	-5%	414	-7%	373	-16%
COSMOPOLIS	Grays Harbor	Small	Small Change	179	128	-29%	165	-8%	175	-2%	138	-23%
COULEE-HARTLINE	Grant	Small	Small Change	152	45	-71%	84	-45%	87	-43%	48	-68%

District Name	County	Distict Size	Growth Category	2007 Total Actual Enrollments	K Linear Cohort Survival (5-yr Average)		Cohort Survival with Births to K		Cohort Survival with Births to K with Housing Adjustment		K Linear Cohort Survival with Housing Adjustment	
					2007 Projection	Diff from Actual	2007 Projection	Diff from Actual	2007 Projection	Diff from Actual	2007 Projection	Diff from Actual
COUPEVILLE	Island	Medium	Small Change	1,156	1,026	-11%	1,016	-12%	1,077	-7%	1,087	-6%
CRESCENT	Clallam	Small	Small Change	254	201	-21%	200	-21%	206	-19%	207	-19%
CRESTON	Lincoln	Small	Small Change	116	161	39%	131	13%	144	24%	174	50%
CURLEW	Ferry	Small	Small Change	228	124	-46%	193	-15%	193	-15%	124	-46%
CUSICK	Pend Oreille	Small	Small Change	278	216	-22%	231	-17%	238	-15%	223	-20%
DAMMAN	Kittitas	Very Small	Small Change	40	13	-68%	47	17%	47	19%	14	-66%
DARRINGTON	Snohomish	Small	Small Change	541	532	-2%	565	4%	537	-1%	504	-7%
DAVENPORT	Lincoln	Small	Small Change	583	520	-11%	478	-18%	477	-18%	519	-11%
DAYTON	Columbia	Small	Small Change	526	590	12%	549	4%	535	2%	576	10%
DEER PARK	Spokane	Medium	Growth	2,455	2,276	-7%	2,235	-9%	2,274	-7%	2,316	-6%
DIERINGER	Pierce	Medium	Growth	1,234	829	-33%	1,133	-8%	1,445	17%	1,141	-8%
DIXIE	Walla Walla	Very Small	Small Change	22	49	125%	40	84%	39	78%	48	119%
EAST VALLEY (SPOKANE)	Spokane	Medium	Small Change	4,195	4,061	-3%	4,355	4%	4,549	8%	4,255	1%
EAST VALLEY (YAK)	Yakima	Medium	Growth	2,768	2,196	-21%	2,353	-15%	2,400	-13%	2,243	-19%
EASTMONT	Douglas	Large	Small Change	5,423	5,606	3%	5,570	3%	5,703	5%	5,738	6%
EASTON	Kittitas	Small	Small Change	112	177	58%	175	56%	171	53%	173	54%
EATONVILLE	Pierce	Medium	Small Change	2,090	1,914	-8%	1,989	-5%	1,965	-6%	1,890	-10%
EDMONDS	Snohomish	Large	Small Change	20,618	20,615	0%	21,273	3%	21,971	7%	21,313	3%
ELLENSBURG	Kittitas	Medium	Small Change	2,931	2,937	0%	3,210	10%	3,326	13%	3,053	4%
ELMA	Grays Harbor	Medium	Small Change	1,774	1,885	6%	1,808	2%	1,824	3%	1,901	7%
ENDICOTT	Whitman	Very Small	Small Change	82	25	-69%	57	-30%	56	-31%	25	-70%
ENTIAT	Chelan	Small	Small Change	385	392	2%	377	-2%	378	-2%	392	2%
ENUMCLAW	King	Medium	Small Change	4,632	4,361	-6%	4,700	1%	4,707	2%	4,367	-6%
EPHRATA	Grant	Medium	Small Change	2,259	2,294	2%	2,301	2%	2,341	4%	2,333	3%
EVALINE	Lewis	Very Small	Small Change	50	58	15%	49	-2%	47	-7%	55	10%
EVERETT	Snohomish	Large	Small Change	18,705	17,217	-8%	18,464	-1%	18,085	-3%	16,838	-10%
EVERGREEN (CLARK)	Clark	Large	Small Change	25,153	27,893	11%	27,839	11%	27,220	8%	27,274	8%
FEDERAL WAY	King	Large	Small Change	21,890	21,662	-1%	22,524	3%	22,519	3%	21,657	-1%
FERNDALE	Whatcom	Large	Small Change	5,228	5,316	2%	5,535	6%	5,543	6%	5,324	2%
FIFE	Pierce	Medium	Small Change	3,479	3,270	-6%	3,387	-3%	3,454	-1%	3,337	-4%
FINLEY	Benton	Small	Small Change	971	927	-5%	1,040	7%	1,038	7%	924	-5%
FRANKLIN PIERCE	Pierce	Large	Small Change	7,591	8,514	12%	8,417	11%	8,391	11%	8,488	12%
FREEMAN	Spokane	Small	Small Change	966	826	-15%	895	-7%	884	-9%	815	-16%
GARFIELD	Whitman	Small	Small Change	107	72	-33%	102	-4%	100	-7%	70	-35%
GLENWOOD	Klickitat	Very Small	Small Change	62	66	6%	81	31%	80	29%	65	4%
GOLDENDALE	Klickitat	Medium	Small Change	1,074	1,174	9%	1,193	11%	1,195	11%	1,176	10%
GRAND COULEE DAM	Grant	Small	Small Change	741	653	-12%	761	3%	761	3%	653	-12%
GRANDVIEW	Yakima	Medium	Small Change	3,354	3,273	-2%	3,256	-3%	3,298	-2%	3,315	-1%
GRANGER	Yakima	Medium	Growth	1,485	1,213	-18%	1,333	-10%	1,327	-11%	1,207	-19%
GRANITE FALLS	Snohomish	Medium	Small Change	2,331	2,670	15%	2,777	19%	2,700	16%	2,593	11%
GRAPEVIEW	Mason	Small	Small Change	202	156	-23%	170	-16%	192	-5%	178	-12%
GREAT NORTHERN	Spokane	Very Small	Small Change	35	23	-33%	46	30%	48	36%	25	-27%
GREEN MOUNTAIN	Clark	Small	Small Change	127	136	7%	133	5%	135	6%	138	9%
GRIFFIN	Thurston	Small	Small Change	652	639	-2%	681	4%	696	7%	654	0%
HARRINGTON	Lincoln	Small	Small Change	117	118	0%	125	7%	125	7%	118	0%
HIGHLAND	Yakima	Medium	Small Change	1,138	1,116	-2%	1,178	4%	1,179	4%	1,117	-2%
HIGHLINE	King	Large	Small Change	17,236	16,867	-2%	17,840	4%	17,895	4%	16,922	-2%
HOOD CANAL	Mason	Small	Small Change	291	239	-18%	275	-5%	301	4%	265	-9%

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					2007 Projection	Diff from Actual	2007 Projection	Diff from Actual	2007 Projection	Diff from Actual	2007 Projection	Diff from Actual
HOQUIAM	Grays Harbor	Medium	Small Change	2,006	1,566	-22%	1,885	-6%	1,882	-6%	1,564	-22%
INCHELIUM	Ferry	Small	Small Change	205	234	14%	200	-3%	198	-3%	233	14%
INDEX	Snohomish	Very Small	Small Change	19	60	213%	70	266%	70	267%	60	215%
ISSAQUAH	King	Large	High Growth	16,471	14,941	-9%	15,168	-8%	15,177	-8%	14,950	-9%
KAHLOTUS	Franklin	Very Small	Small Change	64	149	132%	138	115%	138	115%	149	133%
KALAMA	Cowlitz	Small	Small Change	1,010	897	-11%	1,027	2%	1,045	3%	916	-9%
KELLER	Ferry	Very Small	Small Change	35	58	66%	56	60%	57	62%	58	67%
KELSO	Cowlitz	Large	Small Change	5,180	5,063	-2%	5,267	2%	5,302	2%	5,099	-2%
KENNEWICK	Benton	Large	Small Change	14,929	14,992	0%	15,162	2%	15,125	1%	14,954	0%
KENT	King	Large	Small Change	27,104	25,564	-6%	26,526	-2%	26,264	-3%	25,303	-7%
KETTLE FALLS	Stevens	Small	Small Change	819	881	8%	842	3%	851	4%	889	9%
KIONA-BENTON CITY	Benton	Medium	Small Change	1,554	1,378	-11%	1,585	2%	1,560	0%	1,353	-13%
KITTITAS	Kittitas	Small	Growth	625	448	-28%	577	-8%	606	-3%	477	-24%
KLICKITAT	Klickitat	Small	Small Change	131	148	13%	176	35%	176	35%	148	13%
LA CENTER	Clark	Medium	Growth	1,544	1,295	-16%	1,361	-12%	1,380	-11%	1,314	-15%
LA CONNER	Skagit	Small	Small Change	663	565	-15%	608	-8%	635	-4%	592	-11%
LACROSSE JOINT	Whitman	Small	Small Change	148	169	14%	176	19%	177	20%	170	15%
LAKE CHELAN	Chelan	Medium	Small Change	1,343	1,116	-17%	1,227	-9%	1,276	-5%	1,165	-13%
LAKE STEVENS	Snohomish	Large	Small Change	7,657	7,894	3%	7,957	4%	7,811	2%	7,748	1%
LAKE WASHINGTON	King	Large	Small Change	23,511	22,580	-4%	23,090	-2%	23,190	-1%	22,679	-4%
LAKEWOOD	Snohomish	Medium	Small Change	2,542	2,757	8%	2,803	10%	2,836	12%	2,790	10%
LIBERTY	Spokane	Small	Small Change	505	375	-26%	437	-13%	432	-14%	370	-27%
LIND	Adams	Small	Small Change	233	176	-25%	225	-3%	223	-4%	174	-25%
LONGVIEW	Cowlitz	Large	Small Change	7,232	6,568	-9%	7,178	-1%	7,095	-2%	6,485	-10%
LOPEZ ISLAND	San Juan	Small	Small Change	241	273	13%	261	8%	253	5%	264	10%
LYLE	Klickitat	Small	Small Change	333	405	22%	376	13%	375	13%	404	21%
LYNDEN	Whatcom	Medium	Small Change	2,811	2,411	-14%	2,567	-9%	2,591	-8%	2,436	-13%
MABTON	Yakima	Small	Small Change	915	549	-40%	770	-16%	767	-16%	546	-40%
MANSFIELD	Douglas	Very Small	Small Change	85	50	-41%	64	-25%	63	-26%	49	-42%
MANSON	Chelan	Small	Small Change	606	644	6%	671	11%	692	14%	665	10%
MARY M KNIGHT	Mason	Small	Small Change	184	265	44%	250	36%	253	38%	268	46%
MARY WALKER	Stevens	Small	Small Change	584	628	7%	632	8%	636	9%	631	8%
MARYSVILLE	Snohomish	Large	Growth	11,696	11,764	1%	12,389	6%	12,382	6%	11,757	1%
MCCLEARY	Grays Harbor	Small	Small Change	264	340	29%	284	7%	294	12%	350	33%
MEAD	Spokane	Large	Small Change	9,210	9,132	-1%	8,889	-3%	9,077	-1%	9,319	1%
MEDICAL LAKE	Spokane	Medium	Small Change	2,162	2,003	-7%	2,112	-2%	2,136	-1%	2,027	-6%
MERCER ISLAND	King	Medium	Small Change	3,988	3,910	-2%	4,076	2%	4,261	7%	4,095	3%
MERIDIAN	Whatcom	Medium	Small Change	1,640	1,649	1%	1,670	2%	1,760	7%	1,740	6%
METHOW VALLEY	Okanogan	Small	Small Change	566	445	-21%	491	-13%	461	-19%	415	-27%
MILL A	Skamania	Very Small	Small Change	68	74	9%	94	38%	92	35%	72	6%
MONROE	Snohomish	Large	High Growth	6,829	6,974	2%	7,081	4%	7,082	4%	6,976	2%
MONTESANO	Grays Harbor	Medium	Small Change	1,299	1,154	-11%	1,134	-13%	1,149	-12%	1,169	-10%
MORTON	Lewis	Small	Small Change	400	396	-1%	397	-1%	393	-2%	392	-2%
MOSES LAKE	Grant	Large	High Growth	7,301	7,401	1%	7,134	-2%	7,318	0%	7,586	4%
MOSSYROCK	Lewis	Small	Small Change	639	615	-4%	609	-5%	609	-5%	614	-4%
MOUNT ADAMS	Yakima	Medium	Small Change	974	917	-6%	998	2%	994	2%	913	-6%
MOUNT BAKER	Whatcom	Medium	Decline	2,196	2,356	7%	2,486	13%	2,496	14%	2,366	8%

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MOUNT PLEASANT	Skamania	Very Small	Small Change	56	130	132%	110	96%	109	95%	130	131%
MOUNT VERNON	Skagit	Large	Small Change	5,929	6,071	2%	6,117	3%	6,228	5%	6,182	4%
MUKILTEO	Snohomish	Large	Small Change	14,264	14,160	-1%	14,938	5%	14,950	5%	14,172	-1%
NACHES VALLEY	Yakima	Medium	Small Change	1,464	1,653	13%	1,650	13%	1,653	13%	1,656	13%
NAPAVINE	Lewis	Small	Small Change	751	611	-19%	615	-18%	662	-12%	658	-12%
NASELLE GRAYS RIVER	Pacific	Small	Growth	449	313	-30%	308	-31%	310	-31%	314	-30%
NESPELEM	Okanogan	Small	Small Change	151	159	5%	162	7%	162	8%	159	5%
NEWPORT	Pend Oreille	Medium	Small Change	1,134	830	-27%	1,051	-7%	1,050	-7%	829	-27%
NINE MILE FALLS	Spokane	Medium	Small Change	1,724	1,800	4%	1,697	-2%	1,690	-2%	1,794	4%
NOOKSACK VALLEY	Whatcom	Medium	Small Change	1,654	1,482	-10%	1,673	1%	1,699	3%	1,508	-9%
NORTH BEACH	Grays Harbor	Small	Small Change	680	614	-10%	632	-7%	720	6%	702	3%
NORTH FRANKLIN	Franklin	Medium	Small Change	1,809	1,842	2%	1,982	10%	1,966	9%	1,826	1%
NORTH KITSAP	Kitsap	Large	Small Change	6,697	6,938	4%	6,767	1%	6,845	2%	7,015	5%
NORTH MASON	Mason	Medium	Small Change	2,220	2,306	4%	2,367	7%	2,435	10%	2,374	7%
NORTH RIVER	Pacific	Very Small	Small Change	57	56	-1%	67	18%	67	18%	56	-1%
NORTH THURSTON	Thurston	Large	Growth	13,669	13,268	-3%	13,290	-3%	13,983	2%	13,961	2%
NORTHPORT	Stevens	Small	Small Change	207	138	-33%	174	-16%	184	-11%	147	-29%
NORTHSHORE	King	Large	Small Change	19,846	18,472	-7%	19,240	-3%	19,111	-4%	18,343	-8%
OAK HARBOR	Island	Large	Strong decline	5,527	5,413	-2%	5,773	4%	5,752	4%	5,392	-2%
OAKESDALE	Whitman	Small	Small Change	118	74	-38%	117	-1%	117	-1%	74	-38%
OAKVILLE	Grays Harbor	Small	Small Change	274	217	-21%	236	-14%	235	-14%	216	-21%
OCEAN BEACH	Pacific	Medium	Decline	977	907	-7%	969	-1%	965	-1%	903	-8%
OCOSTA	Grays Harbor	Small	Small Change	650	592	-9%	629	-3%	633	-3%	596	-8%
ODESSA	Lincoln	Small	Small Change	230	213	-7%	225	-2%	228	-1%	216	-6%
OKANOGAN	Okanogan	Medium	Small Change	1,001	694	-31%	850	-15%	841	-16%	686	-32%
OLYMPIA	Thurston	Large	Small Change	9,193	8,720	-5%	8,886	-3%	8,965	-2%	8,799	-4%
OMAK	Okanogan	Medium	Decline	1,757	1,485	-15%	1,703	-3%	1,720	-2%	1,502	-14%
ONALASKA	Lewis	Small	Small Change	882	896	2%	892	1%	893	1%	897	2%
ONION CREEK	Stevens	Very Small	Small Change	35	32	-8%	46	33%	47	35%	33	-5%
ORCAS ISLAND	San Juan	Small	Small Change	479	385	-20%	459	-4%	443	-8%	369	-23%
ORCHARD PRAIRIE	Spokane	Very Small	Small Change	61	108	77%	87	43%	88	44%	109	79%
ORIENT	Ferry	Very Small	Small Change	52	71	37%	90	73%	93	80%	75	44%
ORONDO	Douglas	Small	Small Change	187	256	37%	203	9%	206	10%	258	38%
OROVILLE	Okanogan	Small	Small Change	653	548	-16%	630	-4%	625	-4%	543	-17%
ORTING	Pierce	Medium	Growth	2,145	1,804	-16%	1,955	-9%	2,080	-3%	1,929	-10%
OTHELLO	Adams	Medium	Growth	3,365	3,036	-10%	3,325	-1%	3,329	-1%	3,041	-10%
PALISADES	Douglas	Very Small	Small Change	35	23	-35%	43	23%	42	20%	22	-38%
PALOUSE	Whitman	Small	Small Change	203	152	-25%	184	-10%	184	-9%	153	-25%
PASCO	Franklin	Large	High Growth	13,081	12,590	-4%	12,180	-7%	12,416	-5%	12,825	-2%
PATEROS	Okanogan	Small	Small Change	283	229	-19%	259	-9%	258	-9%	229	-19%
PE ELL	Lewis	Small	Small Change	328	336	2%	357	9%	354	8%	333	2%
PENINSULA	Pierce	Large	Small Change	9,424	9,138	-3%	9,224	-2%	9,240	-2%	9,154	-3%
PIONEER	Mason	Small	Small Change	729	677	-7%	762	5%	894	23%	809	11%
POMEROY	Garfield	Small	Small Change	362	318	-12%	384	6%	384	6%	318	-12%
PORT ANGELES	Clallam	Medium	Decline	4,315	4,191	-3%	4,246	-2%	4,286	-1%	4,231	-2%
PORT TOWNSEND	Jefferson	Medium	Decline	1,433	1,602	12%	1,620	13%	1,617	13%	1,599	12%
PRESCOTT	Walla Walla	Small	Small Change	229	165	-28%	237	3%	235	2%	162	-29%

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PROSSER	Benton	Medium	Small Change	2,828	2,514	-11%	2,717	-4%	2,720	-4%	2,517	-11%
PULLMAN	Whitman	Medium	Small Change	2,272	2,104	-7%	2,129	-6%	2,269	0%	2,244	-1%
PUYALLUP	Pierce	Large	Growth	21,756	21,191	-3%	21,107	-3%	21,386	-2%	21,470	-1%
QUEETS-CLEARWATER	Jefferson	Very Small	Small Change	26	43	65%	38	47%	39	49%	44	68%
QUILCENE	Jefferson	Small	Small Change	258	219	-15%	253	-2%	256	-1%	222	-14%
QUILLAYUTE VALLEY	Clallam	Medium	Small Change	1,410	1,105	-22%	1,153	-18%	1,158	-18%	1,110	-21%
QUINCY	Grant	Medium	Small Change	2,389	2,357	-1%	2,371	-1%	2,373	-1%	2,358	-1%
RAINIER	Thurston	Small	Small Change	941	869	-8%	907	-4%	925	-2%	887	-6%
RAYMOND	Pacific	Small	Small Change	534	476	-11%	446	-16%	424	-21%	454	-15%
REARDAN-EDWALL	Lincoln	Small	Small Change	695	680	-2%	691	-1%	683	-2%	671	-3%
RENTON	King	Large	Growth	13,637	12,910	-5%	13,156	-4%	13,046	-4%	12,800	-6%
REPUBLIC	Ferry	Small	Small Change	420	405	-3%	436	4%	435	4%	405	-4%
RICHLAND	Benton	Large	Small Change	10,127	10,424	3%	10,346	2%	10,251	1%	10,329	2%
RIDGEFIELD	Clark	Medium	Growth	2,108	1,722	-18%	1,911	-9%	2,062	-2%	1,873	-11%
RITZVILLE	Adams	Small	Small Change	364	367	1%	384	6%	381	5%	364	0%
RIVERSIDE	Spokane	Medium	Decline	1,736	1,601	-8%	1,755	1%	1,720	-1%	1,565	-10%
RIVERVIEW	King	Medium	Small Change	3,106	2,668	-14%	2,812	-9%	2,794	-10%	2,650	-15%
ROCHESTER	Thurston	Medium	Growth	2,267	2,138	-6%	2,167	-4%	2,160	-5%	2,131	-6%
ROOSEVELT	Klickitat	Very Small	Small Change	30	6	-80%	24	-21%	27	-11%	9	-71%
ROSALIA	Whitman	Small	Small Change	245	266	8%	275	12%	272	11%	263	7%
ROYAL	Grant	Medium	Small Change	1,406	1,468	4%	1,519	8%	1,553	10%	1,502	7%
SAN JUAN ISLAND	San Juan	Small	Small Change	925	816	-12%	836	-10%	781	-16%	761	-18%
SATSOP	Grays Harbor	Very Small	Small Change	58	104	79%	81	39%	77	33%	100	72%
SEATTLE	King	Large	Small Change	45,024	42,958	-5%	45,134	0%	45,053	0%	42,877	-5%
SEDRO WOOLLEY	Skagit	Medium	Small Change	4,496	4,452	-1%	4,655	4%	4,651	3%	4,448	-1%
SELAH	Yakima	Medium	Small Change	3,398	3,178	-6%	3,300	-3%	3,284	-3%	3,162	-7%
SELKIRK	Pend Oreille	Small	Small Change	319	219	-31%	284	-11%	307	-4%	243	-24%
SEQUIM	Clallam	Medium	Small Change	2,940	2,763	-6%	2,725	-7%	2,847	-3%	2,885	-2%
SHAW ISLAND	San Juan	Very Small	Small Change	19	6	-71%	2	-89%	3	-85%	6	-67%
SHELTON	Mason	Medium	Small Change	4,288	4,009	-7%	4,103	-4%	4,152	-3%	4,058	-5%
SHORELINE	King	Large	Decline	9,232	8,512	-8%	9,395	2%	9,439	2%	8,556	-7%
SKAMANIA	Skamania	Very Small	Small Change	68	41	-40%	96	42%	91	34%	35	-48%
SKYKOMISH	King	Very Small	Small Change	57	41	-28%	62	10%	62	9%	40	-29%
SNOHOMISH	Snohomish	Large	Growth	9,498	9,047	-5%	9,042	-5%	9,095	-4%	9,100	-4%
SNOQUALMIE VALLEY	King	Large	High Growth	5,709	4,985	-13%	4,921	-14%	4,811	-16%	4,876	-15%
SOAP LAKE	Grant	Small	Small Change	483	452	-6%	531	10%	559	16%	481	-1%
SOUTH BEND	Pacific	Small	Small Change	578	631	9%	611	6%	607	5%	627	8%
SOUTH KITSAP	Kitsap	Large	Decline	10,255	9,682	-6%	10,119	-1%	10,180	-1%	9,743	-5%
SOUTH WHIDBEY	Island	Medium	Decline	1,934	1,972	2%	2,033	5%	2,083	8%	2,023	5%
SOUTHSIDE	Mason	Small	Small Change	229	305	33%	273	19%	276	20%	308	34%
SPOKANE	Spokane	Large	Decline	29,198	28,592	-2%	30,116	3%	30,287	4%	28,764	-1%
ST JOHN	Whitman	Small	Small Change	205	84	-59%	91	-56%	90	-56%	84	-59%
STANWOOD	Snohomish	Large	Small Change	5,368	5,776	8%	5,961	11%	6,004	12%	5,819	8%
STEHEKIN	Chelan	Very Small	Small Change	14	3	-81%	13	-9%	12	-11%	2	-83%
STEILACOOM HIST.	Pierce	Medium	High Growth	2,738	2,544	-7%	2,382	-13%	2,431	-11%	2,593	-5%
STEVENSON-CARSON	Skamania	Medium	Small Change	1,004	965	-4%	1,072	7%	1,095	9%	988	-2%
SULTAN	Snohomish	Medium	Small Change	2,134	2,230	5%	2,406	13%	2,366	11%	2,191	3%

District Name	County	Distict Size	Growth Category	2007 Total Actual Enrollments	K Linear Cohort Survival (5-yr Average)		Cohort Survival with Births to K		Cohort Survival with Births to K with Housing Adjustment		K Linear Cohort Survival with Housing Adjustment	
					2007 Projection	*Diff from Actual*	*2007 Projection*	*Diff from Actual*	*2007 Projection*	*Diff from Actual*	*2007 Projection*	*Diff from Actual*
SUMMIT VALLEY	Stevens	Very Small	Small Change	90	112	24%	88	-2%	87	-3%	111	23%
SUMNER	Pierce	Large	Small Change	8,258	7,843	-5%	8,176	-1%	8,083	-2%	7,750	-6%
SUNNYSIDE	Yakima	Large	Small Change	5,708	6,302	10%	5,947	4%	5,923	4%	6,277	10%
TACOMA	Pierce	Large	Strong decline	29,391	30,845	5%	32,206	10%	32,473	10%	31,112	6%
TAHOLAH	Grays Harbor	Small	Small Change	200	164	-18%	202	1%	202	1%	164	-18%
TAHOMA	King	Large	High Growth	7,226	6,055	-16%	6,200	-14%	6,270	-13%	6,124	-15%
TEKOA	Whitman	Small	Small Change	207	142	-31%	170	-18%	171	-17%	144	-31%
TENINO	Thurston	Medium	Small Change	1,356	1,402	3%	1,418	5%	1,413	4%	1,398	3%
THORP	Kittitas	Small	Small Change	149	173	16%	210	41%	211	42%	174	17%
TOLEDO	Lewis	Small	Small Change	962	1,024	6%	1,038	8%	1,044	9%	1,030	7%
TONASKET	Okanogan	Medium	Small Change	1,046	985	-6%	986	-6%	953	-9%	952	-9%
TOPPENISH	Yakima	Medium	Small Change	3,233	3,064	-5%	3,228	0%	3,233	0%	3,069	-5%
TOUCHET	Walla Walla	Small	Small Change	310	337	9%	339	9%	342	10%	339	9%
TOUTLE LAKE	Cowlitz	Small	Small Change	653	550	-16%	555	-15%	573	-12%	568	-13%
TROUT LAKE	Klickitat	Small	Small Change	153	138	-10%	139	-9%	142	-7%	140	-8%
TUKWILA	King	Medium	Small Change	2,842	2,885	2%	2,691	-5%	2,691	-5%	2,885	2%
TUMWATER	Thurston	Large	Small Change	6,277	6,323	1%	6,545	4%	6,622	5%	6,400	2%
UNION GAP	Yakima	Small	Small Change	604	601	0%	599	-1%	598	-1%	601	-1%
UNIVERSITY PLACE	Pierce	Large	Small Change	5,440	5,398	-1%	5,349	-2%	5,336	-2%	5,385	-1%
VALLEY	Stevens	Small	Growth	570	202	-65%	172	-70%	173	-70%	203	-64%
VANCOUVER	Clark	Large	Small Change	22,424	21,877	-2%	23,300	4%	23,183	3%	21,759	-3%
VASHON ISLAND	King	Medium	Small Change	1,573	1,345	-14%	1,464	-7%	1,459	-7%	1,340	-15%
WAHKIAKUM	Wahkiakum	Small	Small Change	483	443	-8%	408	-15%	431	-11%	465	-4%
WAHLUKE	Grant	Medium	Growth	1,855	1,947	5%	1,919	3%	1,934	4%	1,962	6%
WAITSBURG	Walla Walla	Small	Small Change	346	315	-9%	364	5%	367	6%	317	-8%
WALLA WALLA	Walla Walla	Large	Small Change	5,932	5,519	-7%	5,650	-5%	5,724	-4%	5,593	-6%
WAPATO	Yakima	Medium	Small Change	3,386	3,480	3%	3,509	4%	3,504	3%	3,475	3%
WARDEN	Grant	Small	Small Change	969	967	0%	1,034	7%	1,022	5%	955	-1%
WASHOUGAL	Clark	Medium	Growth	3,039	2,736	-10%	2,750	-10%	2,799	-8%	2,785	-8%
WASHTUCNA	Adams	Very Small	Small Change	57	35	-38%	50	-12%	49	-13%	35	-39%
WATERVILLE	Douglas	Small	Small Change	301	253	-16%	269	-11%	269	-10%	254	-16%
WELLPINIT	Stevens	Small	Small Change	318	527	66%	488	54%	489	54%	528	66%
WENATCHEE	Chelan	Large	Small Change	7,567	7,436	-2%	7,419	-2%	7,563	0%	7,580	0%
WEST VALLEY (SPOKANE)	Spokane	Medium	Small Change	3,759	3,724	-1%	3,731	-1%	3,775	0%	3,767	0%
WEST VALLEY (YAKIMA)	Yakima	Medium	Small Change	4,858	4,239	-13%	4,416	-9%	4,503	-7%	4,326	-11%
WHITE PASS	Lewis	Small	Decline	496	328	-34%	508	2%	531	7%	351	-29%
WHITE RIVER	Pierce	Medium	Small Change	4,398	4,778	9%	4,712	7%	4,654	6%	4,721	7%
WHITE SALMON VALLEY	Klickitat	Medium	Small Change	1,166	1,193	2%	1,190	2%	1,182	1%	1,185	2%
WILBUR	Lincoln	Small	Small Change	252	226	-10%	199	-21%	200	-21%	227	-10%
WILLAPA VALLEY	Pacific	Small	Small Change	359	353	-2%	364	1%	361	1%	350	-2%
WILSON CREEK	Grant	Small	Small Change	128	131	3%	150	17%	157	23%	138	8%
WINLOCK	Lewis	Small	Small Change	779	702	-10%	767	-2%	784	1%	719	-8%
WISHKAH VALLEY	Grays Harbor	Small	Small Change	164	192	17%	215	31%	216	32%	193	17%
WISHRAM	Klickitat	Very Small	Small Change	63	18	-72%	46	-27%	46	-26%	18	-71%
WOODLAND	Cowlitz	Medium	Growth	2,245	2,150	-4%	2,106	-6%	2,145	-4%	2,189	-2%
YAKIMA	Yakima	Large	Small Change	14,237	14,200	0%	14,449	1%	14,393	1%	14,144	-1%
YELM	Thurston	Large	High Growth	5,357	4,915	-8%	4,899	-9%	5,008	-7%	5,024	-6%
ZILLAH	Yakima	Medium	Small Change	1,299	1,373	6%	1,342	3%	1,315	1%	1,345	4%
TOTAL				**1,012,615**	**981,952**	**-3.0%**	**1,011,382**	**-0.1%**	**1,015,956**	**0.3%**	**986,527**	**-2.6%**

ATTACHMENT D

Five-year Error Rates of Kindergarten Enrollment Projections

District Name	County	Distict Size	Growth Category	2007 Kindergarten Actual Enrollments	K Linear Trend		Births to Kindergarten Ratio	
					2007 Projection	*Diff from Actual*	*2007 Projection*	*Diff from Actual*
ABERDEEN	Grays Harbor	Medium	Decline	247	306	24%	252	2%
ADNA	Lewis	Small	Small Change	41	34	-17%	35	-15%
ALMIRA	Lincoln	Very Small	Small Change	8	11	41%	7	-13%
ANACORTES	Skagit	Medium	Small Change	195	191	-2%	211	8%
ARLINGTON	Snohomish	Large	Small Change	373	341	-9%	335	-10%
ASOTIN-ANATONE	Asotin	Small	Small Change	44	20	-54%	33	-25%
AUBURN	King	Large	Growth	998	821	-18%	873	-13%
BAINBRIDGE ISLAND	Kitsap	Medium	Small Change	222	198	-11%	203	-9%
BATTLE GROUND	Clark	Large	Growth	812	820	1%	814	0%
BELLEVUE	King	Large	Growth	1,107	931	-16%	987	-11%
BELLINGHAM	Whatcom	Large	Small Change	719	583	-19%	672	-7%
BETHEL	Pierce	Large	Growth	1,109	1,032	-7%	1,062	-4%
BICKLETON	Klickitat	Very Small	Small Change	11	2	-79%	7	-36%
BLAINE	Whatcom	Medium	Small Change	164	89	-46%	132	-20%
BOISTFORT	Lewis	Very Small	Small Change	7	8	12%	11	57%
BREMERTON	Kitsap	Large	Strong Decline	477	280	-41%	420	-12%
BREWSTER	Okanogan	Small	Small Change	67	35	-48%	64	-4%
BRIDGEPORT	Douglas	Small	Small Change	56	39	-30%	56	0%
BRINNON	Jefferson	Very Small	Small Change	3	1	-78%	7	133%
BURLINGTON-EDISON	Skagit	Medium	Growth	283	245	-14%	273	-4%
CAMAS	Clark	Large	High Growth	352	362	3%	325	-8%
CAPE FLATTERY	Clallam	Small	Small Change	30	51	71%	38	27%
CARBONADO	Pierce	Small	Small Change	15	10	-31%	20	33%
CASCADE	Chelan	Medium	Small Change	103	85	-17%	92	-11%
CASHMERE	Chelan	Medium	Small Change	106	93	-12%	97	-8%
CASTLE ROCK	Cowlitz	Medium	Small Change	98	80	-19%	87	-11%
CENTERVILLE	Klickitat	Very Small	Small Change	9	8	-12%	8	-11%
CENTRAL KITSAP	Kitsap	Large	Decline	938	717	-24%	770	-18%
CENTRAL VALLEY	Spokane	Large	High Growth	879	771	-12%	716	-19%
CENTRALIA	Lewis	Medium	Small Change	286	300	5%	270	-6%
CHEHALIS	Lewis	Medium	Growth	174	197	13%	195	12%
CHENEY	Spokane	Medium	Growth	286	206	-28%	237	-17%
CHEWELAH	Stevens	Medium	Decline	53	54	2%	69	30%
CHIMACUM	Jefferson	Medium	Decline	79	33	-58%	68	-14%
CLARKSTON	Asotin	Medium	Small Change	185	149	-20%	189	2%
CLE ELUM-ROSLYN	Kittitas	Small	Small Change	66	66	0%	73	11%
CLOVER PARK	Pierce	Large	Decline	1,222	1,104	-10%	1,295	6%
COLFAX	Whitman	Small	Small Change	32	45	40%	54	69%

District Name	County	Distict Size	Growth Category	2007 Kindergarten Actual Enrollments	K Linear Trend		Births to Kindergarten Ratio	
					2007 Projection	*Diff from Actual*	*2007 Projection*	*Diff from Actual*
COLLEGE PLACE	Walla Walla	Small	Small Change	101	84	-16%	88	-13%
COLTON	Whitman	Small	Small Change	10	11	8%	20	100%
COLUMBIA (STEVENS)	Stevens	Small	Small Change	5	6	29%	14	180%
COLUMBIA (WALLA WALLA)	Walla Walla	Small	Small Change	63	61	-3%	65	3%
COLVILLE	Stevens	Medium	Small Change	132	130	-2%	151	14%
CONCRETE	Skagit	Small	Small Change	34	-18	-153%	53	56%
CONWAY	Skagit	Small	Small Change	45	32	-29%	41	-9%
COSMOPOLIS	Grays Harbor	Small	Small Change	19	12	-37%	22	16%
COULEE-HARTLINE	Grant	Small	Small Change	6	5	-17%	16	167%
COUPEVILLE	Island	Medium	Small Change	60	65	8%	63	5%
CRESCENT	Clallam	Small	Small Change	28	14	-51%	13	-54%
CRESTON	Lincoln	Small	Small Change	7	13	88%	6	-14%
CURLEW	Ferry	Small	Small Change	11	-5	-148%	14	27%
CUSICK	Pend Oreille	Small	Small Change	11	13	15%	17	55%
DAMMAN	Kittitas	Very Small	Small Change	7	-1	-112%	8	14%
DARRINGTON	Snohomish	Small	Small Change	32	31	-4%	38	19%
DAVENPORT	Lincoln	Small	Small Change	55	46	-16%	32	-42%
DAYTON	Columbia	Small	Small Change	28	42	51%	38	36%
DEER PARK	Spokane	Medium	Growth	150	117	-22%	108	-28%
DIERINGER	Pierce	Medium	Growth	116	23	-81%	79	-32%
DIXIE	Walla Walla	Very Small	Small Change	4	7	80%	5	25%
EAST VALLEY (SPOKANE)	Spokane	Medium	Small Change	330	215	-35%	294	-11%
EAST VALLEY (YAK)	Yakima	Medium	Growth	194	125	-36%	161	-17%
EASTMONT	Douglas	Large	Small Change	369	343	-7%	325	-12%
EASTON	Kittitas	Small	Small Change	9	12	35%	10	11%
EATONVILLE	Pierce	Medium	Small Change	123	109	-12%	128	4%
EDMONDS	Snohomish	Large	Small Change	1,388	1,492	8%	1,599	15%
ELLENSBURG	Kittitas	Medium	Small Change	220	175	-20%	222	1%
ELMA	Grays Harbor	Medium	Small Change	109	125	15%	105	-4%
ENDICOTT	Whitman	Very Small	Small Change	4	-2	-154%	7	75%
ENTIAT	Chelan	Small	Small Change	33	34	2%	28	-15%
ENUMCLAW	King	Medium	Small Change	294	234	-21%	321	9%
EPHRATA	Grant	Medium	Small Change	128	167	31%	165	29%
EVALINE	Lewis	Very Small	Small Change	6	11	77%	8	33%
EVERETT	Snohomish	Large	Small Change	1,411	1,156	-18%	1,438	2%
EVERGREEN (CLARK)	Clark	Large	Small Change	1,777	2,069	16%	1,939	9%
FEDERAL WAY	King	Large	Small Change	1,475	1,402	-5%	1,614	9%
FERNDALE	Whatcom	Large	Small Change	338	324	-4%	366	8%

District Name	County	Distict Size	Growth Category	2007 Kindergarten Actual Enrollments	K Linear Trend		Births to Kindergarten Ratio	
					2007 Projection	*Diff from Actual*	*2007 Projection*	*Diff from Actual*
FIFE	Pierce	Medium	Small Change	232	177	-24%	207	-11%
FINLEY	Benton	Small	Small Change	63	50	-21%	79	25%
FRANKLIN PIERCE	Pierce	Large	Small Change	502	561	12%	534	6%
FREEMAN	Spokane	Small	Small Change	54	33	-39%	51	-6%
GARFIELD	Whitman	Small	Small Change	7	0	-105%	10	43%
GLENWOOD	Klickitat	Very Small	Small Change	6	2	-66%	6	0%
GOLDENDALE	Klickitat	Medium	Small Change	59	82	39%	84	42%
GRAND COULEE DAM	Grant	Small	Small Change	40	23	-43%	51	28%
GRANDVIEW	Yakima	Medium	Small Change	287	255	-11%	241	-16%
GRANGER	Yakima	Medium	Growth	120	87	-28%	117	-3%
GRANITE FALLS	Snohomish	Medium	Small Change	144	156	8%	174	21%
GRAPEVIEW	Mason	Small	Small Change	22	15	-32%	18	-18%
GREAT NORTHERN	Spokane	Very Small	Small Change	5	1	-79%	7	40%
GREEN MOUNTAIN	Clark	Small	Small Change	17	18	6%	17	0%
GRIFFIN	Thurston	Small	Small Change	64	48	-25%	55	-14%
HARRINGTON	Lincoln	Small	Small Change	4	8	95%	9	125%
HIGHLAND	Yakima	Medium	Small Change	83	72	-13%	87	5%
HIGHLINE	King	Large	Small Change	1,326	1,032	-22%	1,290	-3%
HOOD CANAL	Mason	Small	Small Change	33	26	-20%	36	9%
HOQUIAM	Grays Harbor	Medium	Small Change	122	35	-72%	128	5%
INCHELIUM	Ferry	Small	Small Change	18	24	31%	14	-22%
INDEX	Snohomish	Very Small	Small Change	1	5	433%	7	600%
ISSAQUAH	King	Large	High Growth	1,205	877	-27%	923	-23%
KAHLOTUS	Franklin	Very Small	Small Change	5	10	107%	8	60%
KALAMA	Cowlitz	Small	Small Change	73	35	-52%	68	-7%
KELLER	Ferry	Very Small	Small Change	5	9	80%	8	60%
KELSO	Cowlitz	Large	Small Change	335	302	-10%	350	4%
KENNEWICK	Benton	Large	Small Change	1,136	1,004	-12%	1,043	-8%
KENT	King	Large	Small Change	1,810	1,586	-12%	1,818	0%
KETTLE FALLS	Stevens	Small	Small Change	65	72	11%	63	-3%
KIONA-BENTON CITY	Benton	Medium	Small Change	110	65	-41%	122	11%
KITTITAS	Kittitas	Small	Growth	59	16	-72%	45	-24%
KLICKITAT	Klickitat	Small	Small Change	5	6	17%	13	160%
LA CENTER	Clark	Medium	Growth	92	85	-8%	95	3%
LA CONNER	Skagit	Small	Small Change	45	36	-19%	48	7%
LACROSSE JOINT	Whitman	Small	Small Change	5	9	76%	11	120%
LAKE CHELAN	Chelan	Medium	Small Change	86	67	-22%	92	7%
LAKE STEVENS	Snohomish	Large	Small Change	501	528	5%	519	4%

District Name	County	Distict Size	Growth Category	2007 Kindergarten Actual Enrollments	K Linear Trend		Births to Kindergarten Ratio	
					2007 Projection	*Diff from Actual*	*2007 Projection*	*Diff from Actual*
LAKE WASHINGTON	King	Large	Small Change	1,694	1,489	-12%	1,597	-6%
LAKEWOOD	Snohomish	Medium	Small Change	189	193	2%	196	4%
LIBERTY	Spokane	Small	Small Change	38	18	-54%	34	-11%
LIND	Adams	Small	Small Change	16	5	-70%	19	19%
LONGVIEW	Cowlitz	Large	Small Change	533	380	-29%	541	2%
LOPEZ ISLAND	San Juan	Small	Small Change	14	17	22%	14	0%
LYLE	Klickitat	Small	Small Change	19	35	82%	26	37%
LYNDEN	Whatcom	Medium	Small Change	186	146	-22%	181	-3%
MABTON	Yakima	Small	Small Change	70	8	-89%	67	-4%
MANSFIELD	Douglas	Very Small	Small Change	4	3	-24%	6	50%
MANSON	Chelan	Small	Small Change	42	44	6%	49	17%
MARY M KNIGHT	Mason	Small	Small Change	11	25	124%	19	73%
MARY WALKER	Stevens	Small	Small Change	42	33	-21%	35	-17%
MARYSVILLE	Snohomish	Large	Growth	836	757	-9%	881	5%
MCCLEARY	Grays Harbor	Small	Small Change	33	46	40%	31	-6%
MEAD	Spokane	Large	Small Change	524	550	5%	493	-6%
MEDICAL LAKE	Spokane	Medium	Small Change	164	143	-13%	174	6%
MERCER ISLAND	King	Medium	Small Change	225	201	-11%	240	7%
MERIDIAN	Whatcom	Medium	Small Change	109	106	-3%	107	-2%
METHOW VALLEY	Okanogan	Small	Small Change	35	15	-57%	25	-29%
MILL A	Skamania	Very Small	Small Change	9	9	-3%	12	33%
MONROE	Snohomish	Large	High Growth	410	398	-3%	403	-2%
MONTESANO	Grays Harbor	Medium	Small Change	97	71	-27%	67	-31%
MORTON	Lewis	Small	Small Change	30	28	-7%	28	-7%
MOSES LAKE	Grant	Large	High Growth	616	657	7%	575	-7%
MOSSYROCK	Lewis	Small	Small Change	41	46	11%	44	7%
MOUNT ADAMS	Yakima	Medium	Small Change	92	70	-24%	91	-1%
MOUNT BAKER	Whatcom	Medium	Decline	129	136	5%	162	26%
MOUNT PLEASANT	Skamania	Very Small	Small Change	9	18	102%	11	22%
MOUNT VERNON	Skagit	Large	Small Change	469	471	0%	471	0%
MUKILTEO	Snohomish	Large	Small Change	1,040	858	-17%	1,023	-2%
NACHES VALLEY	Yakima	Medium	Small Change	101	105	4%	100	-1%
NAPAVINE	Lewis	Small	Small Change	43	47	8%	47	9%
NASELLE GRAYS RIVER	Pacific	Small	Growth	23	18	-23%	16	-30%
NESPELEM	Okanogan	Small	Small Change	23	22	-6%	21	-9%
NEWPORT	Pend Oreille	Medium	Small Change	90	12	-87%	83	-8%
NINE MILE FALLS	Spokane	Medium	Small Change	90	113	26%	89	-1%
NOOKSACK VALLEY	Whatcom	Medium	Small Change	111	79	-29%	127	14%

District Name	County	Distict Size	Growth Category	2007 Kindergarten Actual Enrollments	K Linear Trend		Births to Kindergarten Ratio	
					2007 Projection	*Diff from Actual*	*2007 Projection*	*Diff from Actual*
NORTH BEACH	Grays Harbor	Small	Small Change	42	38	-9%	43	2%
NORTH FRANKLIN	Franklin	Medium	Small Change	140	123	-12%	167	19%
NORTH KITSAP	Kitsap	Large	Small Change	422	451	7%	419	-1%
NORTH MASON	Mason	Medium	Small Change	133	131	-2%	139	5%
NORTH RIVER	Pacific	Very Small	Small Change	4	0	-100%	2	-50%
NORTH THURSTON	Thurston	Large	Growth	872	874	0%	846	-3%
NORTHPORT	Stevens	Small	Small Change	16	1	-97%	12	-25%
NORTHSHORE	King	Large	Small Change	1,230	1,024	-17%	1,207	-2%
OAK HARBOR	Island	Large	Strong decline	434	354	-18%	464	7%
OAKESDALE	Whitman	Small	Small Change	13	-4	-128%	10	-23%
OAKVILLE	Grays Harbor	Small	Small Change	19	16	-16%	22	16%
OCEAN BEACH	Pacific	Medium	Decline	74	46	-38%	61	-18%
OCOSTA	Grays Harbor	Small	Small Change	50	36	-28%	47	-6%
ODESSA	Lincoln	Small	Small Change	22	13	-43%	15	-32%
OKANOGAN	Okanogan	Medium	Small Change	74	21	-72%	59	-20%
OLYMPIA	Thurston	Large	Small Change	563	533	-5%	555	-1%
OMAK	Okanogan	Medium	Decline	170	65	-62%	121	-29%
ONALASKA	Lewis	Small	Small Change	55	60	9%	58	5%
ONION CREEK	Stevens	Very Small	Small Change	5	2	-55%	5	0%
ORCAS ISLAND	San Juan	Small	Small Change	29	10	-66%	29	0%
ORCHARD PRAIRIE	Spokane	Very Small	Small Change	9	18	103%	12	33%
ORIENT	Ferry	Very Small	Small Change	5	4	-25%	8	60%
ORONDO	Douglas	Small	Small Change	28	45	61%	28	0%
OROVILLE	Okanogan	Small	Small Change	44	28	-35%	48	9%
ORTING	Pierce	Medium	Growth	154	91	-41%	130	-16%
OTHELLO	Adams	Medium	Growth	292	208	-29%	290	-1%
PALISADES	Douglas	Very Small	Small Change	5	3	-39%	9	80%
PALOUSE	Whitman	Small	Small Change	12	4	-65%	14	17%
PASCO	Franklin	Large	High Growth	1,083	992	-8%	910	-16%
PATEROS	Okanogan	Small	Small Change	18	12	-31%	20	11%
PE ELL	Lewis	Small	Small Change	16	21	32%	26	63%
PENINSULA	Pierce	Large	Small Change	549	493	-10%	512	-7%
PIONEER	Mason	Small	Small Change	81	62	-24%	81	0%
POMEROY	Garfield	Small	Small Change	22	12	-46%	20	-9%
PORT ANGELES	Clallam	Medium	Decline	299	258	-14%	265	-11%
PORT TOWNSEND	Jefferson	Medium	Decline	88	83	-6%	81	-8%
PRESCOTT	Walla Walla	Small	Small Change	19	2	-92%	24	26%
PROSSER	Benton	Medium	Small Change	197	157	-20%	211	7%

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PULLMAN	Whitman	Medium	Small Change	194	159	-18%	174	-10%
PUYALLUP	Pierce	Large	Growth	1,429	1,407	-2%	1,378	-4%
QUEETS-CLEARWATER	Jefferson	Very Small	Small Change	6	7	13%	5	-17%
QUILCENE	Jefferson	Small	Small Change	11	6	-45%	14	27%
QUILLAYUTE VALLEY	Clallam	Medium	Small Change	88	81	-8%	91	3%
QUINCY	Grant	Medium	Small Change	182	199	9%	201	10%
RAINIER	Thurston	Small	Small Change	45	50	10%	56	24%
RAYMOND	Pacific	Small	Small Change	41	43	5%	33	-20%
REARDAN-EDWALL	Lincoln	Small	Small Change	50	37	-27%	36	-28%
RENTON	King	Large	Growth	1,008	906	-10%	957	-5%
REPUBLIC	Ferry	Small	Small Change	25	19	-22%	27	8%
RICHLAND	Benton	Large	Small Change	676	678	0%	654	-3%
RIDGEFIELD	Clark	Medium	Growth	142	82	-42%	121	-15%
RITZVILLE	Adams	Small	Small Change	28	26	-6%	31	11%
RIVERSIDE	Spokane	Medium	Decline	101	71	-30%	110	9%
RIVERVIEW	King	Medium	Small Change	233	169	-28%	205	-12%
ROCHESTER	Thurston	Medium	Growth	125	138	10%	138	10%
ROOSEVELT	Klickitat	Very Small	Small Change	5	0	-100%	3	-40%
ROSALIA	Whitman	Small	Small Change	16	18	10%	21	31%
ROYAL	Grant	Medium	Small Change	118	125	6%	137	16%
SAN JUAN ISLAND	San Juan	Small	Small Change	68	51	-25%	53	-22%
SATSOP	Grays Harbor	Very Small	Small Change	2	12	521%	7	250%
SEATTLE	King	Large	Small Change	3,943	3,140	-20%	3,706	-6%
SEDRO WOOLLEY	Skagit	Medium	Small Change	260	251	-3%	296	14%
SELAH	Yakima	Medium	Small Change	233	183	-21%	207	-11%
SELKIRK	Pend Oreille	Small	Small Change	15	4	-76%	24	60%
SEQUIM	Clallam	Medium	Small Change	171	165	-4%	149	-13%
SHAW ISLAND	San Juan	Very Small	Small Change	2	6	176%	2	0%
SHELTON	Mason	Medium	Small Change	255	223	-12%	238	-7%
SHORELINE	King	Large	Decline	549	386	-30%	619	13%
SKAMANIA	Skamania	Very Small	Small Change	5	-1	-115%	11	120%
SKYKOMISH	King	Very Small	Small Change	4	-1	-119%	4	0%
SNOHOMISH	Snohomish	Large	Growth	605	650	7%	623	3%
SNOQUALMIE VALLEY	King	Large	High Growth	411	346	-16%	325	-21%
SOAP LAKE	Grant	Small	Small Change	29	23	-19%	46	59%
SOUTH BEND	Pacific	Small	Small Change	39	45	16%	38	-3%
SOUTH KITSAP	Kitsap	Large	Decline	660	533	-19%	669	1%
SOUTH WHIDBEY	Island	Medium	Decline	97	96	-1%	114	18%

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SOUTHSIDE	Mason	Small	Small Change	21	35	67%	27	29%
SPOKANE	Spokane	Large	Decline	2,170	1,753	-19%	2,179	0%
ST JOHN	Whitman	Small	Small Change	17	13	-21%	16	-6%
STANWOOD	Snohomish	Large	Small Change	320	314	-2%	343	7%
STEHEKIN	Chelan	Very Small	Small Change	0	0	N/A	1	N/A
STEILACOOM HIST.	Pierce	Medium	High Growth	427	180	-58%	140	-67%
STEVENSON-CARSON	Skamania	Medium	Small Change	64	62	-4%	72	13%
SULTAN	Snohomish	Medium	Small Change	126	114	-9%	152	21%
SUMMIT VALLEY	Stevens	Very Small	Small Change	9	19	110%	12	33%
SUMNER	Pierce	Large	Small Change	512	453	-11%	537	5%
SUNNYSIDE	Yakima	Large	Small Change	491	569	16%	456	-7%
TACOMA	Pierce	Large	Strong decline	2,367	2,179	-8%	2,533	7%
TAHOLAH	Grays Harbor	Small	Small Change	10	6	-44%	18	80%
TAHOMA	King	Large	High Growth	471	369	-22%	403	-14%
TEKOA	Whitman	Small	Small Change	11	5	-52%	14	27%
TENINO	Thurston	Medium	Small Change	99	93	-6%	93	-6%
THORP	Kittitas	Small	Small Change	10	5	-48%	13	30%
TOLEDO	Lewis	Small	Small Change	51	58	13%	61	20%
TONASKET	Okanogan	Medium	Small Change	62	66	6%	62	0%
TOPPENISH	Yakima	Medium	Small Change	292	226	-22%	266	-9%
TOUCHET	Walla Walla	Small	Small Change	13	17	32%	18	38%
TOUTLE LAKE	Cowlitz	Small	Small Change	50	41	-18%	41	-18%
TROUT LAKE	Klickitat	Small	Small Change	9	8	-16%	8	-11%
TUKWILA	King	Medium	Small Change	239	238	0%	185	-23%
TUMWATER	Thurston	Large	Small Change	356	330	-7%	374	5%
UNION GAP	Yakima	Small	Small Change	71	67	-6%	63	-11%
UNIVERSITY PLACE	Pierce	Large	Small Change	309	318	3%	304	-2%
VALLEY	Stevens	Small	Growth	52	26	-50%	19	-63%
VANCOUVER	Clark	Large	Small Change	1,597	1,516	-5%	1,780	11%
VASHON ISLAND	King	Medium	Small Change	72	70	-3%	99	38%
WAHKIAKUM	Wahkiakum	Small	Small Change	27	37	36%	20	-26%
WAHLUKE	Grant	Medium	Growth	170	172	1%	161	-5%
WAITSBURG	Walla Walla	Small	Small Change	18	8	-56%	21	17%
WALLA WALLA	Walla Walla	Large	Small Change	440	326	-26%	368	-16%
WAPATO	Yakima	Medium	Small Change	252	263	4%	263	4%
WARDEN	Grant	Small	Small Change	73	76	4%	93	27%
WASHOUGAL	Clark	Medium	Growth	225	199	-12%	192	-15%
WASHTUCNA	Adams	Very Small	Small Change	4	0	-100%	4	0%

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WATERVILLE	Douglas	Small	Small Change	10	19	88%	23	130%
WELLPINIT	Stevens	Small	Small Change	40	47	17%	36	-10%
WENATCHEE	Chelan	Large	Small Change	591	533	-10%	498	-16%
WEST VALLEY (SPOKANE)	Spokane	Medium	Small Change	215	208	-3%	212	-1%
WEST VALLEY (YAKIMA)	Yakima	Medium	Small Change	347	226	-35%	259	-25%
WHITE PASS	Lewis	Small	Decline	38	0	-100%	48	26%
WHITE RIVER	Pierce	Medium	Small Change	282	289	3%	272	-4%
WHITE SALMON VALLEY	Klickitat	Medium	Small Change	95	86	-9%	84	-12%
WILBUR	Lincoln	Small	Small Change	16	20	24%	12	-25%
WILLAPA VALLEY	Pacific	Small	Small Change	28	18	-37%	20	-29%
WILSON CREEK	Grant	Small	Small Change	12	6	-48%	10	-17%
WINLOCK	Lewis	Small	Small Change	52	38	-28%	55	6%
WISHKAH VALLEY	Grays Harbor	Small	Small Change	9	6	-32%	12	33%
WISHRAM	Klickitat	Very Small	Small Change	1	-2	-343%	4	300%
WOODLAND	Cowlitz	Medium	Growth	176	153	-13%	140	-20%
YAKIMA	Yakima	Large	Small Change	1,201	1,080	-10%	1,116	-7%
YELM	Thurston	Large	High Growth	339	293	-13%	278	-18%
ZILLAH	Yakima	Medium	Small Change	97	91	-6%	81	-16%
TOTAL				**72,156**	**63,749**	**-11.7%**	**70,295**	**-2.6%**