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Lake Oswego School District Population and Enrollment Forecasts 2019-20 to 2028-29

Portland State University. Population Research Center

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**LAKE OSWEGO SCHOOL DISTRICT
POPULATION AND ENROLLMENT FORECASTS
2019-20 TO 2028-29**



JANUARY 2019

**LAKE OSWEGO SCHOOL DISTRICT
POPULATION AND ENROLLMENT FORECASTS
2019-20 TO 2028-29**

**Prepared By
Population Research Center
Portland State University**

January 2019

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CONTENTS

EXECUTIVE SUMMARY.....	1
Population and Housing Trends.....	1
Housing and Enrollment	1
Enrollment Trends.....	2
Enrollment Forecasts	2
INTRODUCTION	5
POPULATION, HOUSING, AND EMPLOYMENT TRENDS, 2000 to 2018	7
Employment.....	7
Births	9
Housing Growth and Characteristics	9
HOUSING AND ENROLLMENT.....	13
Students by Housing Type and Age of Single Family Home.....	13
Enrollment and Housing Turnover	16
ENROLLMENT TRENDS.....	19
Private and Home School Enrollment and Inter-district Transfers.....	21
Enrollment Trends at Individual Schools	23
ENROLLMENT FORECASTS.....	25
District-wide Long-range Forecast Methodology	25
Population Forecast	26
District-wide Enrollment Forecast	28
FORECAST ACCURACY.....	35
APPENDIX A: Annual School Forecasts by Grade Level.....	
APPENDIX B: 2013-2017 Population, Housing, Social and Economic Profile.....	

TABLES AND CHARTS

Tables 1a-b	Historic and Forecast Enrollment, LOSD.....	4
Table 2	City and Region Population.....	7
Table 3	Lake Oswego S.D., Housing and Household Characteristics.....	10
Table 4a	New Single Family Homes Permitted by Attendance Area.....	11
Table 4b	Single Family Home Demolition Permits by Attendance Area.....	11
Table 5	Average Number of LOSD Students per Home, Fall 2018.....	15
Table 6	Average Number of LOSD Students per Home Built before 1997.....	17
Table 7	LOSD School District, Enrollment History, 2008-09 to 2018-19.....	20
Table 8	LOSD Non-Resident Students.....	22
Table 9	Enrollment History for Individual Schools, 2013-14 to 2018-19.....	24
Table 10	Population by Age Group, History and Forecast, LOSD 2000 to 2030.....	27
Tables 11a-b	Lake Oswego SD Enrollment Forecasts, 2019-20 to 2028-29.....	30-31
Tables 12a-b	LOSD, Enrollment Forecasts for Individual Schools, 2019-20 to 2028-29.....	32-33
Table 13	2018-19 Enrollment Compared to Previous Forecasts by Grade Level.....	35
Chart 1	LOSD K-12 Enrollment History and Forecasts.....	3
Chart 2	Annual Births 2000-2017, Lake Oswego SD.....	9
Chart 3	LOSD K-12 Students per Home, by Housing Type, Fall 2018.....	14
Chart 4	LOSD K-12 Students per Single Family Home, Fall 2018.....	15
Chart 5	LOSD Students Residing in Homes Sold 2014-2017.....	18
Chart 6	LOSD Students Residing in Homes Sold Before 2013.....	18
Chart 7	Net Migration, 2000-2030, Lake Oswego SD History and Forecast.....	26
Chart 8	LOSD Birth Cohorts and Kindergarten Enrollment History and Forecast.....	28

EXECUTIVE SUMMARY

This report presents the results of a demographic study conducted by the Portland State University Population Research Center (PRC) for the Lake Oswego School District (LOSD). The study includes analyses of population, housing and enrollment trends affecting the District in recent years, and forecasts of district-wide school enrollments for the 2019-20 to 2028-29 school years. Following are some of the highlights found in this report.

Population and Housing Trends

- The current decade has seen wide fluctuations in annual births to LOSD residents. The 2015 total of 342 births was the largest number since 2001, while the most recent observation, 254 in 2017, was the lowest of the century.
- Building permits were issued for 428 new single family homes within the District between January 2014 and September 2018. During the same period demolition permits were issued for 212 homes, resulting in a net change of 216 homes authorized by permits. The net change was nearly evenly split between the north (Lake Oswego High) and south (Lakeridge High) parts of the District.

Housing and Enrollment

- Similar to other districts, the average number of LOSD elementary students per home is highest in single family homes built within the past 10 years, while the highest average number of LOSD high school students per home occurs in homes between 10 and 20 years old. Homes more than 20 years old have fewer children at all grade levels. Student generation rates (SGRs) by type and age of home are reported in Table 5 on page 15.
- A new discovery is that SGRs in older homes that have recently turned over to new homebuyers are nearly identical to those in newly constructed homes. The number of LOSD elementary students residing in homes built before 1997 and sold between 2014 and 2017 nearly doubled between fall 2013 and fall 2018.

Enrollment Trends

- The K-12 total was 6,996 in fall 2018, the fourth consecutive year that enrollment remained near the 7,000 mark. This includes enrollment at all 10 LOSD schools but not Outside Placements.
- Between fall 2012 and fall 2018 the number of non-resident students attending LOSD increased by 117, due primarily to an increase in Open Enrollment, a state policy under which districts could designate space for non-residents at specific grades and schools. The open enrollment statute contained a sunset provision, effective July 1, 2019. Therefore, unless the policy is extended in the 2019 legislative session, new students will not be admitted under Open Enrollment for the 2019-20 school year.
- Four consecutive years of growth between 2011-12 and 2015-16 saw the K-12 total increase by 266 students from 6,757 to 7,023.
- Gradual increases in elementary (K-5th grade) enrollment have resulted in net growth of 203 students since 2007-08, when K-5 enrollment was at a recent low. District-wide elementary enrollment in fall 2018 was 2,858.
- In spite of a 46 student decline from fall 2017, 6th-8th grade enrollment of 1,704 in fall 2018 was 83 students larger than its recent low in the 2010-11 school year.
- High school (9th-12th) enrollment in fall 2018 was 2,434, an increase of 50 students from fall 2017. However, it is below the recent peak of 2,491 in 2015-16. District-wide 9th-12th grade enrollment has not fallen below 2,300 nor surpassed 2,500 in any school year since the century began.

Enrollment Forecasts

- Tables 1a and 1b summarize two scenarios of future enrollment. Forecasts in Table 1a assume that the Open Enrollment policy that was in place for the 2012-13 through 2018-19 school years will be extended by the 2019 legislature and that the District chooses to participate at levels similar to recent years. Table 1b depicts an alternative with no new Open Enrollment students.

- Elementary enrollments are identical in the two scenarios, and remain within 40 students of the 2018-19 K-5th grade total of 2,858.
- The baseline scenario in Table 1a includes 60 more 6th to 8th grade students than the alternate scenario shown in Table 1b.
- In the baseline scenario high school enrollment is relatively stable, remaining within 31 students (one percent) until 2023-24, and then growing by 75 students (three percent) from 2023-24 to 2028-29 (Table 1a). Keeping all other assumptions the same as in the baseline, without accepting new Open Enrollment students after 2018-19, high school enrollment would fall by 147 students (six percent) to a low in 2023-24 before stabilizing or increasing slightly (Table 1b).
- Chart 1 depicts the District’s 10 year K-12 enrollment history and 10 year forecasts under both scenarios. More detailed forecasts for the District may be found in Tables 11a and 11b on pages 30-31 of this report. Detail for individual schools corresponding to each district-wide scenario may be found in Tables 12a and 12b on pages 32-33.

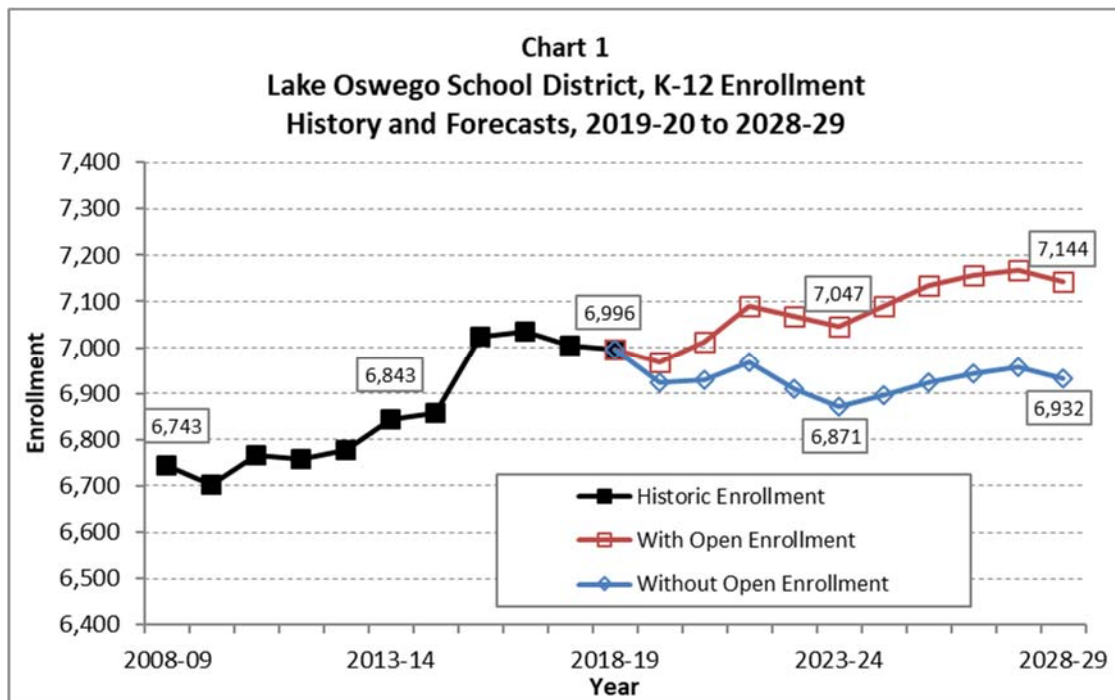


Table 1a
Historic and Forecast* Enrollment
Lake Oswego School District

	Actual			Forecast	
	2008-09	2013-14	2018-19	2023-24	2028-29
District Total	6,743	6,843	6,996	7,047	7,144
<i>5 year change</i>		100 1%	153 2%	51 1%	97 1%
K-5	2,709	2,722	2,858	2,825	2,867
<i>5 year change</i>		13 0%	136 5%	-33 -1%	42 1%
6-8	1,652	1,656	1,704	1,819	1,799
<i>5 year change</i>		4 0%	48 3%	115 7%	-20 -1%
9-12	2,382	2,465	2,434	2,403	2,478
<i>5 year change</i>		83 3%	-31 -1%	-31 -1%	75 3%

**In this Baseline (status quo) scenario 22 6th grade students and 22 9th grade students are admitted under the Open Enrollment policy each year, similar to recent years.*

Population Research Center, PSU. December 2018.

Table 1b
Historic and Forecast* Enrollment
Lake Oswego School District

	Actual			Forecast	
	2008-09	2013-14	2018-19	2023-24	2028-29
District Total	6,743	6,843	6,996	6,871	6,932
<i>5 year change</i>		100 1%	153 2%	-125 -2%	61 1%
K-5	2,709	2,722	2,858	2,825	2,867
<i>5 year change</i>		13 0%	136 5%	-33 -1%	42 1%
6-8	1,652	1,656	1,704	1,759	1,739
<i>5 year change</i>		4 0%	48 3%	55 3%	-20 -1%
9-12	2,382	2,465	2,434	2,287	2,326
<i>5 year change</i>		83 3%	-31 -1%	-147 -6%	39 2%

**In this scenario the District is unable to admit new students under the Open Enrollment policy after the 2018-19 school year. All other assumptions are the same as in the Baseline scenario.*

Population Research Center, PSU. December 2018.

INTRODUCTION

The Lake Oswego School District (LOSD) requested that the Portland State University Population Research Center (PRC) update enrollment forecasts for the District and its schools. PRC last prepared forecasts for LOSD in 2014. This report updates LOSD enrollment history and local area population, housing, and economic trends, and presents new forecasts for a 10 year horizon from 2019-20 to 2028-29. Information sources include the U.S. Census Bureau, birth data from the Oregon Center for Health Statistics, population estimates and forecasts produced by PRC and Metro, and housing development data from the City of Lake Oswego. Data was not sought from other jurisdictions as the other cities account for relatively minor development in relation to housing developments approved by the City of Lake Oswego.

The District serves most of the City of Lake Oswego and adjacent unincorporated areas, all of the City of Rivergrove, and small portions of the Cities of Tualatin, West Linn, and Portland. At the time of the 2010 Census, 99 percent of the District's population lived within Clackamas County, and 84 percent lived within the City of Lake Oswego.

Following this introduction are sections presenting recent population, housing, employment, and enrollment trends within the District, and analysis of the number of students in different types of homes. Next are the results of the district-wide enrollment forecasts and a description of the methodology used to produce them. The final section contains a brief discussion of the accuracy of forecasts. An Appendix contains a one page summary of the latest American Community Survey data published by the Census Bureau.

POPULATION, HOUSING, AND EMPLOYMENT TRENDS, 2000 to 2018

The LOSD area has experienced modest population growth since 2000. Population grew by just two percent from 39,873 in 2000 to 40,755 in 2010, compared with 11 percent growth for Clackamas County and 15 percent for the Portland Metropolitan Statistical Area (MSA). The County and MSA have continued to grow in the 2010s at a pace similar to their growth in the 2000s, while growth in the City of Lake Oswego has accelerated slightly. Reliable post-2010 population estimates for the District are not available.

Table 2
City and Region Population, 2000, 2010, and 2018

	2000	2010	2018	Avg. Annual Growth Rate	
				2000-2010	2010-2018
LOSD Total ¹	39,873	40,755	N/A	0.2%	N/A
City of Lake Oswego ²	35,666	36,574	38,215	0.3%	0.5%
LOSD Portion	33,273	34,146	N/A	0.3%	N/A
City of Rivergrove ³	345	350	505	0.1%	4.5%
LOSD Unincorporated	6,255	6,259	N/A	0.0%	N/A
Clackamas County	338,391	375,992	419,425	1.1%	1.3%
Multnomah County	660,486	735,334	813,300	1.1%	1.2%
Washington County	445,342	529,710	595,860	1.8%	1.4%
Portland-Vancouver-Hillsboro MSA ⁴	1,927,881	2,226,009	2,477,620	1.4%	1.3%

1. School District population determined by PSU-PRC based on aggregation of census blocks within the LOSD boundary. The 2010 LOSD population published by the Census Bureau is 40,616.

2. City of Lake Oswego gained 96 persons between 2000 and 2010 and 53 persons between 2010 and 2018 due to annexation.

3. City of Rivergrove population estimated for 2010 by Population Research Center due to undercount reported in the 2010 Census.

4. Portland-Vancouver-Hillsboro MSA consists of Clackamas, Columbia, Multnomah, Washington, Yamhill (OR) and Clark and Skamania (WA) Counties.

Sources: U.S. Census Bureau, 2000, and 2010 censuses; Portland State University Population Research Center July 1, 2018 estimates; State of Washington Office of Financial Management April 1, 2018 estimates.

Employment

Recent origin-destination employment statistics show that more than 86 percent of employed LOSD residents commute beyond the District's boundaries. More residents work in Multnomah

County (39 percent) or Washington County (26 percent) than in Clackamas County (25 percent).¹ Therefore, demand for housing in the LOSD is related to the strength of the entire region's economy.

The MSA lost 64,000 jobs (six percent) between 2008 and 2010, causing in-migration to slow to a trickle. By 2013 employment totals had slowly recovered to their pre-recession peak level and the MSA added another 129,000 jobs (12 percent) between 2013 and 2017.² The Oregon Employment Department estimates that the MSA's seasonally adjusted unemployment has been at or below 4.0 from November 2017 through the latest estimate in November 2018.³

The Oregon Employment Department prepared 10 year employment projections in June 2018.⁴ Following are highlights for the Portland area:

Employment in the Portland tri-county area (Multnomah, Washington, and Clackamas counties) is projected to grow by 12.7 percent from 2017 to 2027, faster than the statewide average of 12 percent. Healthcare support occupations will grow the fastest in this region, with an increase of 21.4 percent, followed by computer and mathematical occupations, with an increase of 19.6 percent. Production occupations have the slowest growth rate at 4.6 percent, followed by office and administrative support occupations at 6.8 percent.⁵

¹U.S. Census Bureau. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. 2015 data. Includes one (primary) job per resident. <http://onthemap.ces.census.gov/>

² "Current Employment Estimates," Oregon Employment Department. <https://www.qualityinfo.org/ed-ceest>. Retrieved on January 7, 2019. Average annual non-farm employment in the Portland-Vancouver-Hillsboro MSA was 1,043,400 in 2008, 979,200 in 2010, 1,044,500 in 2013, and 1,173,300 in 2017.

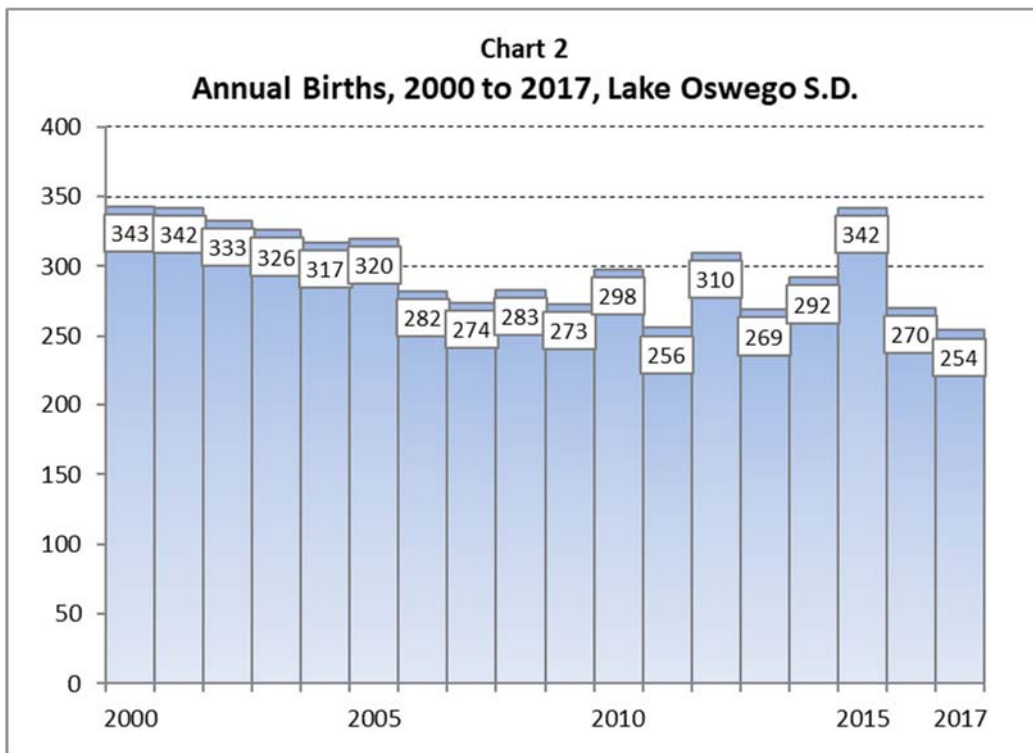
³ "Employment in the Portland Metro Area: November 2018," December 27, 2018. Oregon Employment Department. <https://www.qualityinfo.org/documents/10182/73818/Employment+in+Portland+Metro+Area?version=1.59>

⁴Projections are available at <https://www.qualityinfo.org/projections>.

⁵"Health Care, Computer Occupations Lead Portland Tri-County Employment Projections" State of Oregon Employment Department, September 6, 2018.

Births

The number of births each year to residents of the LOSD gradually declined from a high of 343 in 2000 to just 273 in 2009, as shown in Chart 2. The annual average of 286 births from 2010 to 2017 was slightly higher than the 2006 to 2009 average of 278. However, the current decade has seen wide fluctuation in annual totals and the 254 births in 2017 were the lowest total of the century thus far. LOSD was not alone in seeing fewer births among its residents in 2017; births were the lowest since 1996 statewide and since 1978 in Multnomah County. Because more young families move into than out of LOSD the District is not merely dependent on births for its future enrollment. In the “Enrollment Forecasts” section of this report, we examine the relationship between births, migration, and subsequent school enrollments.



Housing Growth and Characteristics

During the 2000 to 2010 period the District added 1,170 housing units (seven percent growth), as shown in Table 3. The number of new households nearly kept pace during the period, growing by 1,038 (six percent), as occupancy rates remained near 94 percent. The number of households with children declined during the decade and the share with children declined from 35 to 30 percent of all District households. The 2010 share of households with children was slightly lower

than the 32 percent share in the Portland MSA overall. The average number of persons per household in LOSD also decreased between 2000 and 2010; the 2.34 person average in 2010 was significantly below the 2.52 average in the MSA.

More recent data are not included in Table 3 because they are not strictly comparable to decennial census data, and are less reliable. However, a housing unit inventory based on administrative records indicates that there were 18,819 housing units in 2017.⁶

	2000	2010	10 year Change	
			Numeric	Percent
Housing Units	17,238	18,408	1,170	7%
Households	16,249	17,287	1,038	6%
Households with children under 18 <i>share of total</i>	5,650 35%	5,212 30%	-438	-8%
Households with no children under 18 <i>share of total</i>	10,599 65%	12,075 70%	1,476	14%
Household Population	39,694	40,522	828	2%
Persons per Household	2.44	2.34	-0.10	-4%

Source: U.S. Census Bureau, 2000, and 2010 Censuses; data aggregated to LOSD boundary by Portland State University Population Research Center.

Nearly five years of recent residential permit activity are presented in Table 4a. According to our unofficial tally, permits were issued for 428 single family homes during the period, with the greatest activity each year occurring within the Forest Hills Elementary area. However, the high land values in Lake Oswego mean that it is often feasible to demolish an older home just to build one new home. Note that Table 4b shows 212 permits for single family home demolitions during the period, resulting in net growth of just 216 homes authorized by permits. Demolitions were most prevalent in the Lake Oswego High School Area. Therefore, the net change in single family homes based on permits since 2014 is similar in the Lake Oswego HS area (+113) and the Lakeridge HS area (+103).

⁶ PRC developed a 2017 housing unit inventory for Clackamas, Multnomah, and Washington Counties based on the multi-family inventory and taxlot data from Metro’s RLIS.

Table 4a includes single family homes, both detached and attached. Multiple family development during the period consists of the 200 unit Windward Apartments, a six unit condominium and a duplex, all in downtown Lake Oswego within the Forest Hills Elementary area.

Table 4a
New Single Family Homes Permitted
Lake Oswego School District by Attendance Area

Elementary Area	Year Permit Issued					2018 (Jan-Sep)	4.75 year Total
	2014	2015	2016	2017	2018		
Forest Hills	45	51	38	31	12		177
Hallinan	16	15	12	10	1		54
Lake Grove	6	12	19	20	5		62
Oak Creek	0	2	8	6	2		18
River Grove	19	14	18	12	7		70
Westridge	5	11	13	13	5		47
High/Middle School Area							
Lake Oswego	51	65	65	57	19		257
Lakeridge	40	40	43	35	13		171
District	91	105	108	92	32		428

Source: Records from Construction Monitor, LLC processed and geocoded by PSU Population Research Center.

Table 4b
Single Family Home Demolition Permits
Lake Oswego School District by Attendance Area

Elementary Area	Year Permit Issued					2018 (Jan-Sep)	4.75 year Total
	2014	2015	2016	2017	2018		
Forest Hills	28	23	15	21	11		98
Hallinan	5	4	2	5	0		16
Lake Grove	8	8	10	10	8		44
Oak Creek	1	1	0	0	0		2
River Grove	3	3	4	6	4		20
Westridge	4	5	9	9	5		32
High/Middle School Area							
Lake Oswego	37	32	25	31	19		144
Lakeridge	12	12	15	20	9		68
District Total	49	44	40	51	28		212

Source: Records from Construction Monitor, LLC processed and geocoded by PSU Population Research Center.

In addition to ongoing small scale redevelopment and infill, plans for at least three single family subdivisions are under review in the City of Lake Oswego, including a five lot subdivision (LU 18-0018) in the River Grove Elementary area, a 25 lot subdivision (LU 18-0024) in the Lake Grove Elementary area, and a six lot subdivision (LU 17-0084) in the Hallinan Elementary area.

Another significant development in the works is Mercantile Village (LU 18-0026), a mixed use development at Kruse Way and Boones Ferry Road in the Lake Grove Elementary area with 208 residential units. There are typically very few school children living in market-rate multi-family developments. However, because 103 units in Mercantile Village are planned as two bedroom or larger units, the LOSD can expect some students once the development is occupied.

The 25 lot subdivision and Mercantile Village are in the Lake Oswego Junior/Senior High School area while the two smaller subdivisions are in the Lakeridge Junior/Senior High School Area.

HOUSING AND ENROLLMENT

How many children are expected to live in future new homes and attend LOSD schools? Because each housing development is unique, the number of resident public school students per home may depend on factors including affordability, proximity to schools, the number of bedrooms, and the presence or absence of child-friendly amenities within the development and in the surrounding neighborhood. However, district-wide average student generation rates are useful as a baseline for estimating potential student generation from planned and proposed developments. Furthermore, measuring the number of students in older homes helps to explain the “aging in place” phenomenon that can lead to enrollment losses as families age.

Using data from Metro, we compiled a current housing inventory in a spatial file that differentiates single family homes, duplexes/triplexes, apartments, and condominiums. We then combined this file with student address points from fall 2018 in order to quantify the number of students by housing type. We also identified homes with a sale date between 2014 and 2017 and compared their fall 2018 LOSD student populations with fall 2013.

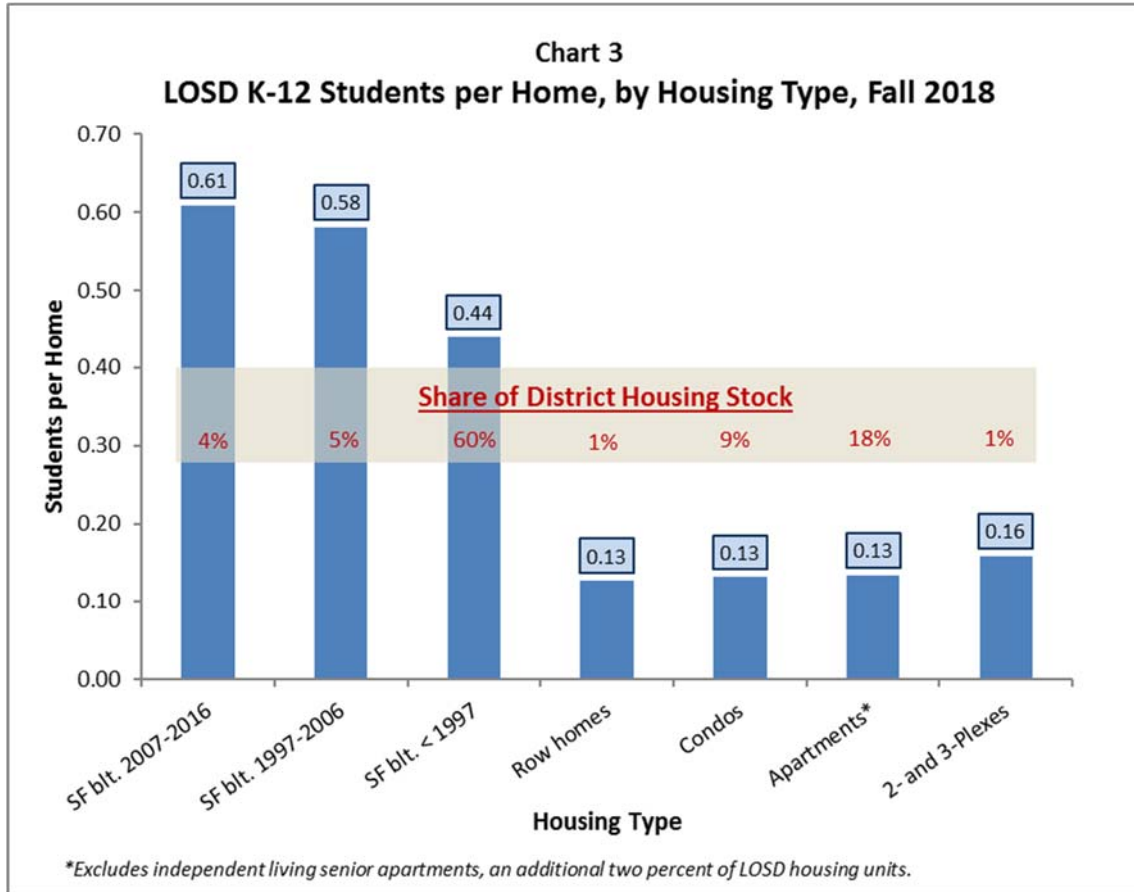
Students by Housing Type and Age of Single Family Home

From our work measuring average student generation rates (SGRs) in several other Portland area districts, we have observed that single family homes less than 10 years old consistently have the greatest average number of students, while those 20 years old and older average the fewest. These observations are also valid in LOSD in 2018. For District homes built since 2007 the average number of LOSD K-12 students per single family home was 0.61, about three students in every five homes. This is similar to rates that we have measured for new detached single family homes in studies for other area school districts.⁷ Homes built between 1997 and 2006 had a slightly lower K-12 average of 0.58 students, and homes built before 1997 have an average of just 0.44 LOSD K-12 students per home.

Chart 3 depicts these rates by age of single family home as well as rates for other types of homes. Detached single family homes comprise 69 percent of the District’s housing stock and are home

⁷ For example, 0.59 in the Tigard-Tualatin School District (fall 2013), 0.67 in the North Clackamas School District (fall 2012), and 0.49 in the Oregon City School District (fall 2012).

to 89 percent of LOSD students residing within the District. The other 11 percent of resident students live in rental apartments, condominiums, attached homes, duplexes, or triplexes. All of these housing types are home to fewer LOSD students per home, on average.



The SGRs are presented in greater detail in Table 5, including grade level detail and for single family homes built in the last two decades, lot size. Most homes on lots smaller than 2,750 square feet are attached, or nearly attached; homes on these lots are categorized as row homes in the table, while homes on lots larger than 2,750 square feet are categorized as detached homes. There are fewer LOSD students, on average, in homes on smaller lots compared with those on larger lots. Row homes average 0.13 K-12 students, the same as in condos and apartments.

Fall 2018 SGRs for detached single family homes are shown in Chart 4, illustrating “aging in place”. Homes that are 10 years old or newer have an average of 0.30 LOSD grade K-5 students, which is greater than the 0.21 in homes 10-20 years old and the 0.18 average in homes more than 20 years

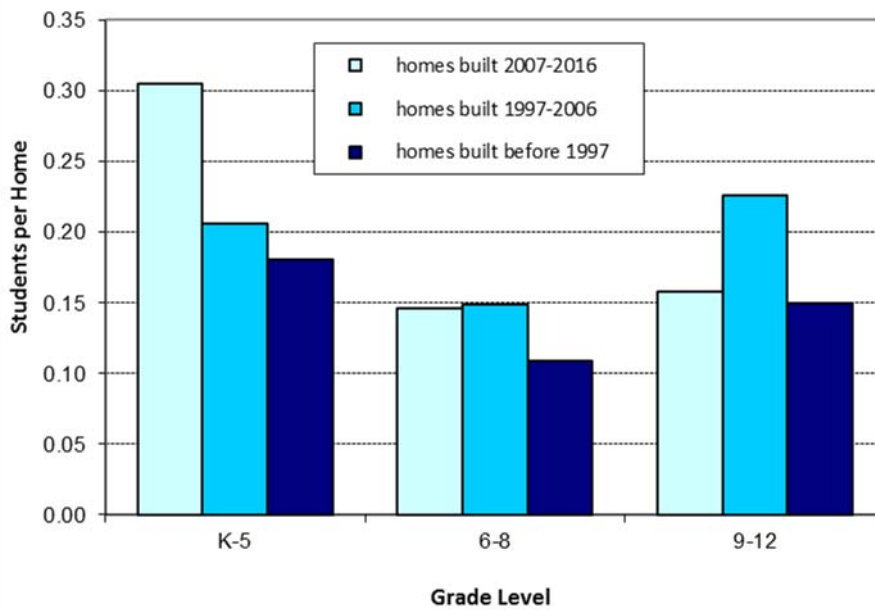
old. Homes that are 10-20 years old have the greatest number of high school students per home, and those more than 20 years old have the fewest number per home regardless of grade level.

Table 5
Average Number of LOSD Students per Home, Fall 2018
By Housing Type and Grade Level

	Grade Level			
	K-5	6-8	9-12	K-12
Detached single family homes				
homes built 2007-2016	0.30	0.15	0.16	0.61
homes built 1997-2006	0.21	0.15	0.23	0.58
homes built before 1997	0.18	0.11	0.15	0.44
Row homes	0.03	0.03	0.07	0.13
Condominiums	0.06	0.03	0.04	0.13
Apartments (4+ unit buildings)	0.07	0.03	0.03	0.13
Duplexes and Triplexes	0.08	0.05	0.03	0.16

Source: Data compiled by PSU-PRC, using LOSD student data and geographic shape files from Metro RLIS. Excludes senior housing developments.

Chart 4
LOSD Students per Single Family Home, Fall 2018



Enrollment and Housing Turnover

The table and charts above show that LOSD students are more likely to live in relatively new single family homes than in other types of homes. However, detached single family homes built within the past 20 years make up only nine percent of the District’s housing stock, yet are home to 15 percent of LOSD resident students. There are well over 11,000 single family homes in the District that are more than 20 years old. These homes comprise 60 percent of the housing stock, and are home to 74 percent of LOSD resident students.

Nearly all older homes do eventually turn over to new residents, and some of the turnover results in young families replacing empty nesters. We attempt to quantify the impact of turnover by categorizing the 11,340 “legacy” detached single family homes built before 1997 by date of the most recent sale and by measuring the number of students residing in those homes in fall 2018 and fall 2013.

Questions that we hope to answer through this analysis are:

- Do home sales result in an increase in student population, and if so, how much and at what grade levels?
- How does the pace of sales of legacy homes in LOSD compare with Clackamas County or suburban Portland overall?

Recent sales are characterized as those occurring in calendar years 2014 through 2017, ensuring that new residents were settled by fall 2018 and likely did not live in the home in fall 2013.⁸ The number of residents in the 3,426 homes sold between 2014 and 2017 enrolled in LOSD elementary schools nearly doubled between fall 2013 and fall 2018, confirming the hypothesis that turnover contributes to an increase in student population. In fact, the SGRs shown in Table 6 for fall 2018 students in recently sold homes — 0.29 for K-5th grade, 0.15 for 6th-8th grade, and 0.16 for 9th-12th grade — are nearly identical to those shown in Table 5 for new homes built since

⁸ We did not use occupants’ names or any other information besides sale date and year built; a small number of families could have resided in a home in both 2013 and 2018 in circumstances such as transfers within a family or rental property sales.

2007. Chart 5 shows that the largest increase occurred in elementary grades, indicating that young families are well represented among home purchasers.

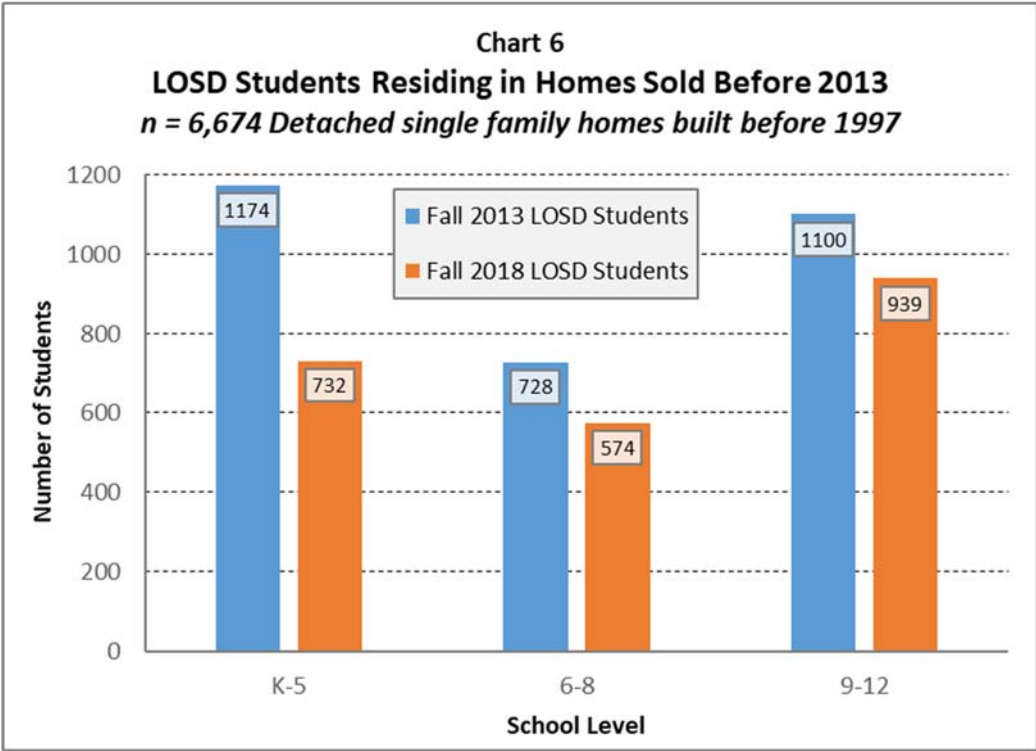
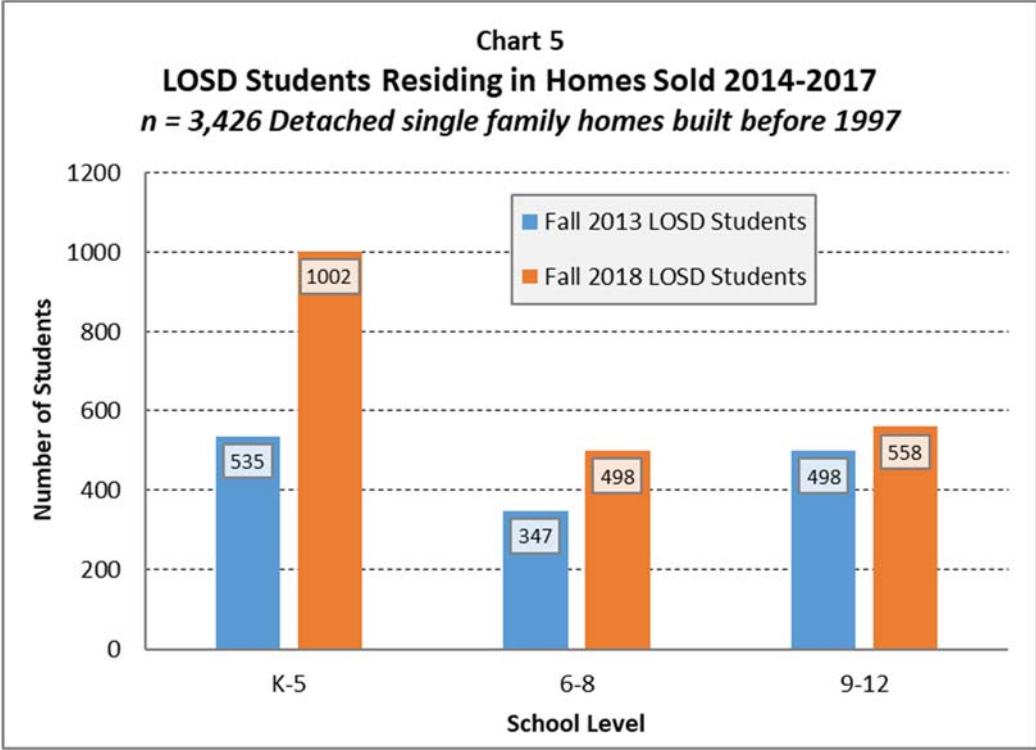
Conversely, the LOSD student population has declined in older homes that have not turned over since before 2013, as existing families have aged. The largest decline occurred in elementary grades, as shown in Chart 6.

The parcel file used in this analysis included sales through June 2018. In the four and one half year period from January 2014 to June 2018, sales were recorded for 34.9 percent of all LOSD detached single family homes built before 1997. The share of LOSD homes sold was slightly higher than the 32.5 percent share for Clackamas County overall. Our finding that home turnover occurs at a faster pace in LOSD and contributes to significant enrollment growth leads to the conclusion that “aging in place” is not more prevalent in Lake Oswego than in other nearby communities.

Table 6
Average Number of LOSD Students per Home
Detached single family homes built before 1997

	Grade Level			
	K-5	6-8	9-12	K-12
Homes sold 2014 to 2017 (n = 3,426)				
Students per home in Fall 2013	0.16	0.10	0.15	0.40
Students per home in Fall 2018	0.29	0.15	0.16	0.60
Homes last sold before 2013 (n = 6,674)				
Students per home in Fall 2013	0.18	0.11	0.16	0.45
Students per home in Fall 2018	0.11	0.09	0.14	0.34

Source: Data compiled by PSU-PRC, using LOSD student data and geographic shape files from Metro RLIS.



ENROLLMENT TRENDS

Table 7 summarizes the enrollment history for the District by grade level annually for the past 10 years, from 2008-09 to 2018-19. The figures include students at all 10 LOSD schools, but do not include Outside Placement students who may be counted in other reports.

Total K-12 enrollment has changed very little since 2015-16. The K-12 total was 6,996 in fall 2018, the fourth consecutive year that enrollment remained near the 7,000 mark. The most significant change to the K-12 total was an increase of 166 students between 2014-15 and 2015-16, on the heels of three consecutive smaller increases between 2011-12 and 2014-15 amounting to 100 students altogether.

Not shown in the table, the District endured a precipitous decline in elementary (K-5th) enrollment early in the century, reaching a low of 2,655 in 2007-08. Since then gradual increases have resulted in net growth of over 200 elementary students. Incoming kindergarten classes of over 400 students in seven of the past 10 years contrast with an average kindergarten enrollment of 356 between 2002-03 and 2008-09. Most of the growth in elementary enrollment has occurred since 2013-14.

With only three grades, junior high school (6th-8th) enrollments can fluctuate from year to year depending on the size of incoming 6th grades and outgoing 8th grades. In spite of a 46 student decline from fall 2017, 6th-8th grade enrollment of 1,704 in fall 2018 was 83 students larger than its recent low in the 2010-11 school year. While non-residents enrolled through Open Enrollment explain nearly half of the long term increase, no new Open Enrollment students were enrolled in 2018-19, contributing to the one year decline.

High school (9th-12th) enrollment in fall 2018 was 2,434, an increase of 50 students from fall 2017. However, it is below the recent peak of 2,491 in 2015-16. District-wide 9th-12th grade enrollment has not fallen below 2,300 nor surpassed 2,500 in any school year since the century began.

Table 7
Lake Oswego School District, Enrollment History, 2008-09 to 2018-19

Grade	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
K	353	419	412	376	402	361	376	434	442	412	407
1	429	414	467	436	407	426	427	423	458	469	430
2	458	442	417	487	467	438	460	454	456	488	474
3	454	475	452	438	513	494	466	494	473	486	516
4	481	466	496	467	457	531	500	491	521	498	506
5	534	491	470	510	503	472	548	527	501	518	525
6	475	549	521	490	527	546	523	602	583	544	544
7	591	493	580	541	521	569	561	532	618	584	555
8	586	604	520	616	561	541	578	575	551	622	605
9	614	594	628	544	664	614	611	641	615	577	645
10	611	604	590	626	562	671	608	610	632	611	575
11	547	588	594	578	624	562	649	606	602	624	606
12	587	535	573	590	568	618	550	634	583	572	608
US*	23	28	47	58	0	0	0	0	0	0	0
Total	6,743	6,702	6,767	6,757	6,776	6,843	6,857	7,023	7,035	7,005	6,996
<i>Annual change</i>		-41 -0.6%	65 1.0%	-10 -0.1%	19 0.3%	67 1.0%	14 0.2%	166 2.4%	12 0.2%	-30 -0.4%	-9 -0.1%
K-5	2,709	2,707	2,714	2,714	2,749	2,722	2,777	2,823	2,855	2,871	2,858
6-8	1,652	1,646	1,621	1,647	1,609	1,656	1,662	1,709	1,752	1,750	1,704
9-12	2,382	2,349	2,432	2,396	2,418	2,465	2,418	2,491	2,428	2,384	2,434

	5 Year Change: 2008-09 to 2013-14		5 Year Change: 2013-14 to 2018-19		10 Year Change: 2008-09 to 2018-19	
	Change	Pct.	Change	Pct.	Change	Pct.
K-5	13	0.5%	136	5.0%	149	5.5%
6-8	4	0.2%	48	2.9%	52	3.1%
9-12	83	3.5%	-31	-1.3%	52	2.2%
Total	100	1.5%	153	2.2%	253	3.8%

*Note: "US" are ungraded secondary students, included in grade 9-12 totals.

Source: Lake Oswego School District

Private and Home School Enrollment and Inter-district Transfers

The Census Bureau’s American Community Survey (ACS) provides an estimate of private school enrollment among LOSD residents based on a question about school enrollment by level and by type (public or private). The current ACS estimate from surveys conducted between 2013 and 2017 is that 809 LOSD K-12th grade students were enrolled in private schools, an 11.0 percent share of all K-12th graders, with a margin of error of plus or minus 2.5 percent.⁹

Another difference between LOSD enrollment and child population can be attributed to home schooling. Home schooled students living in the District are required to register with the Clackamas Education Service District (CESD), though the figures are not precise because students who move out of the area or enroll in other programs might not notify the CESD. Students who enroll in area public schools after being registered as home schooled are supposed to be dropped from the home school registry. As of June 2018 there were 128 LOSD residents registered as home schooled, unchanged from the number in June 2017 and similar to the 132 students registered in 2012-13.¹⁰ The home schooled population accounts for fewer than two percent of LOSD 1st to 12th grade residents.

Private schools and home schooling help to explain the difference between the number of school-age children living in the District and the number attending District schools. Both represent “outflow” from the District. That is, children eligible but not attending District schools. The other “outflow” consists of District residents who attend public schools in other school districts. There is also a related “inflow” of residents from other districts. Under Oregon’s traditional inter-district transfer (IDT) rules, students who want to attend a public school outside of their resident district have to gain approval from their home district and the district that they want to attend, and that approval must be renewed each year. Beginning in the 2012-13 school year, Oregon adopted a new Open Enrollment policy under which students may transfer without approval of their home district to a district that designates available spaces at its schools. Once the student is admitted to the new district, they do not need to

⁹ U.S. Census Bureau 2013-2017 American Community Survey, Table B14002. The margin of error (MOE) at the 90 percent confidence level was calculated by PSU-PRC from MOEs for more detailed estimates by gender and grade ranges.

¹⁰ Correspondence from Kelsey Cardwell, Strategic Communications Officer, Clackamas Education Service District (2017 and 2018 figures); Oregon Department of Education, Data forms submitted by Education Service Districts (2012-13 figure).

reapply annually. The original statute allowing Open Enrollment has expired, and it is unknown whether the Legislature will renew the policy for the 2019-20 school year. Table 8 shows the number of non-resident students enrolled in LOSD schools under both IDTs and Open Enrollment, as well as a smaller number of students paying tuition. Non-resident students in all categories account for very few elementary students, nearly three percent of junior high school students, and nearly 10 percent of high school students.

	Inter-District Transfers ¹	Open Enrollment ²	Tuition	Total
2016-17				
K-5	3	4	3	10
6-8	9	63	2	74
9-12	88	110	9	207
Net	100	177	14	291
2017-18				
K-5	6	0	3	9
6-8	4	70	4	78
9-12	79	118	11	208
Net	89	188	18	295
2018-19				
K-5	4	0	2	6
6-8	5	37	5	47
9-12	73	147	14	234
Net	82	184	21	287
<p>1. Traditional inter-district transfers; annual application required.</p> <p>2. All Open Enrollment students in school year indicated, regardless of initial year of enrollment.</p> <p>Source: Lake Oswego School District</p>				

Enrollment Trends at Individual Schools

Total enrollments at each of the District's schools from 2013-14 to 2018-19 are shown in Table 9. Enrollment change is calculated for the five year period.

About 10 percent of LOSD residents in grades K-5 are enrolled in a school other than their neighborhood school. Therefore, enrollment trends do not necessarily parallel trends in neighborhood school age population. Notably, during the period shown in the table, the Spanish Immersion program was incrementally moved from Lake Grove to River Grove and grew to all elementary grades, accounting for most of the five year decline at LGES and most of the increase at RGES. Among the other elementary schools, Forest Hills and Westridge enrolled about the same number of students in 2018-19 as in 2013-14, and Oak Creek and Hallinan experienced increasing enrollment.

At the junior high level, Lake Oswego Junior High (LOJH) had a net loss of 41 students in the most recent five years while Lakeridge Junior High (LJH) had a net gain of 89 students. LJH has more Open Enrollment students than LOJH and houses the Spanish Immersion program, explaining most but not all of the increase.

Both high schools lost resident population between 2013-14 and 2018-19, based on geocoded student address files. There were 29 fewer neighborhood residents at Lake Oswego High School (LOHS) and 84 fewer at Lakeridge High School (LHS) in 2018-19 than in 2013-14. This decline was influenced by the elementary losses of the last decade as students progressed through grade levels. However, LHS has maintained relatively stable enrollment since 2013-14 due to an increase in out-of-district students, primarily through Open Enrollment.

Table 9
Enrollment History for Individual Schools, 2013-14 to 2018-19

School	Historic Enrollment						5 year change 2013-14 to 2018-19	
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	Number	Percent
Forest Hills Elementary	430	448	452	444	410	425	-5	-1.2%
Lake Grove Elementary	476	465	416	460	405	391	-85	-17.9%
Oak Creek Elementary	525	536	539	478	565	572	47	9.0%
Hallinan Elementary	431	455	435	457	477	457	26	6.0%
River Grove Elementary	395	416	500	538	556	557	162	41.0%
Westridge Elementary	465	457	481	474	458	456	-9	-1.9%
Elementary Totals	2,722	2,777	2,823	2,851	2,871	2,858	136	5.0%
Lake Oswego Junior High School	902	888	920	911	884	861	-41	-4.5%
Lakeridge Junior High School	754	774	789	841	866	843	89	11.8%
Junior High School Totals	1,656	1,662	1,709	1,752	1,750	1,704	48	2.9%
Lake Oswego High School	1,314	1,289	1,340	1,311	1,273	1,277	-37	-2.8%
Lakeridge High School	1,151	1,129	1,151	1,121	1,111	1,157	6	0.5%
High School Totals	2,465	2,418	2,491	2,432	2,384	2,434	-31	-1.3%
District Total	6,843	6,857	7,023	7,035	7,005	6,996	153	2.2%

Source: Lake Oswego School District

ENROLLMENT FORECASTS

District-wide Long-range Forecast Methodology

To ensure that enrollment forecasts are consistent with the dynamics of likely population growth within the District, we combine the grade progression enrollment model with a demographic cohort-component model used to forecast population for the District by age and sex. The components of population change are births, deaths, and migration. Using age-specific fertility rates, age-sex specific mortality rates, age-sex specific migration rates, estimates of recent net migration levels, and forecasts of future migration levels, each component is applied to the base year population in a manner that simulates the actual dynamics of population change.

The 2000 and 2010 Census results were used as a baseline for the population forecasts. By “surviving” the 2000 population and 2000s births (estimating the population in each age group that would survive to the year 2010) and comparing the “survived” population to the actual 2010 population by age group, we were able to estimate the overall level of net migration between 2000 and 2010 as well as net migration by gender and age cohort. The net migration data was used to develop initial net migration rates, which were used as a baseline for rates used to forecast net migration for the 2010 to 2030 period.

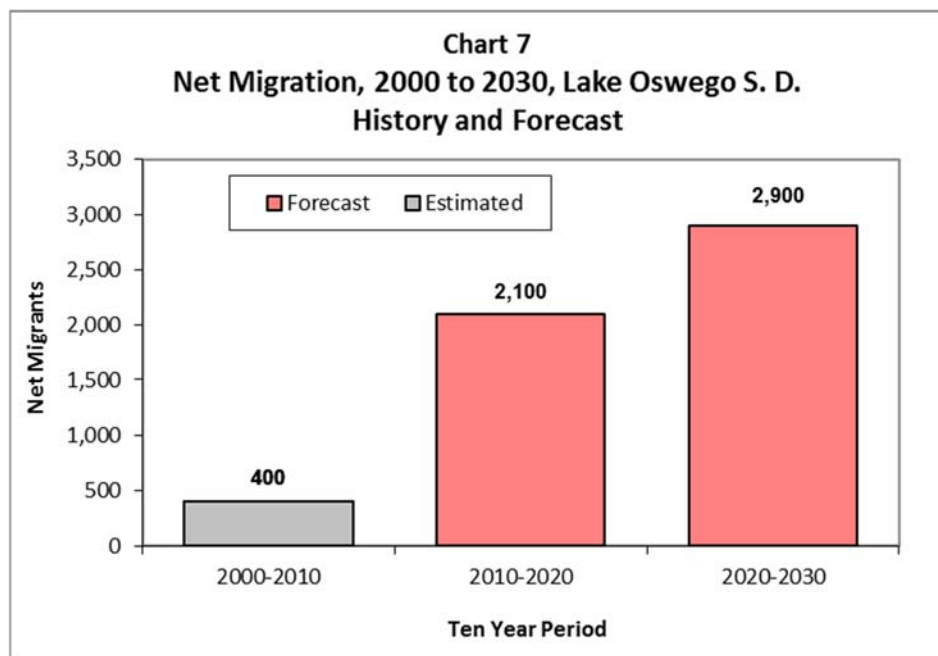
We estimated the number of births to women residing within the District each year from 1999 to 2017, using data from the Oregon Health Authority, Center for Health Statistics. Detailed information including the age of mothers is used to calculate age-specific fertility rates (ASFRs) for both 2000 and 2010.

The total fertility rate (TFR) is another measure of fertility; it is an estimate of the number of children that would be born to the average woman during her child-bearing years based on ASFRs observed at a given time. The estimated TFR for the District decreased from 1.48 in 2000 to 1.43 in 2010. Declines in TFRs also occurred in Clackamas County and the State during the decade. In 2000, the TFRs were 2.02 for Clackamas County and 1.98 for the State; in 2010, the TFRs were 1.89 for Clackamas County and 1.81 for the State. Statewide TFR has fallen even further since 2010, reaching 1.59 in 2017.

Nationwide and in Oregon the number of births peaked in 2007. The decrease after 2007 was initially attributed to economic stress during the Great Recession.¹¹ Although U.S. birth rates for women age 30 and older are now slightly higher than in 2007, rates for women under 30 have continued to decrease; in 2017 ASFRs for women under age 20, age 20 to 24, and 25 to 29 were all at historic lows.¹² LOSD already had relatively high rates for women 30 and older and relatively low rates for women under 30, so changes have not been as extreme. Based on slight decreases to rates for women under 30 and increases for women 30 and older we maintain a TFR of 1.43 throughout the forecast.

Population Forecast

Chart 7 shows the 2000 to 2010 estimates and 2010 to 2030 forecasts of LOSD population change attributable to net migration.



The District added nearly 900 residents in the 2000s. Part of the increase was attributable to positive net migration (more people moving in than moving out) of around 400 persons. Natural increase

¹¹ “In a Down Economy, Fewer Births.” Pew Research Center, Pew Social & Demographic Trends, October 2011; “America’s Baby Bust.” Washington Post, July 21, 2014.

¹² “Births: Final Data for 2017.” National vital statistics reports: from the Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System 67.8 (2018). Available at https://www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_08-508.pdf.

(births minus deaths) accounted for the remainder of residents added. Net migration has accelerated in the current decade and is expected to be even greater in the coming decade between 2020 and 2030. However, due to an aging population and low birth rates, there are already more deaths than births each year. Therefore migration accounts for all of the population increase and more, as natural increase is negative.

Table 10
Population by Age Group, History and Forecast
Lake Oswego School District, 2000 to 2030

	2000 Census	2010 Census	2020 Forecast	2030 Forecast	2010 to 2030 Change	
					Number	Percent
Under Age 5	2,061	1,732	1,711	1,767	35	2%
Age 5 to 9	2,816	2,470	2,423	2,512	42	2%
Age 10 to 14	3,314	3,054	2,895	3,141	87	3%
Age 15 to 17	1,999	1,983	2,058	2,180	197	10%
Age 18 to 19	772	766	671	685	-81	-11%
Age 20 to 24	1,666	1,609	1,651	1,578	-31	-2%
Age 25 to 29	1,953	1,902	2,093	2,119	217	11%
Age 30 to 34	2,100	1,650	1,664	1,755	105	6%
Age 35 to 39	2,911	2,221	2,302	2,560	339	15%
Age 40 to 44	3,879	2,808	2,523	2,599	-209	-7%
Age 45 to 49	4,229	3,413	2,792	2,917	-496	-15%
Age 50 to 54	3,768	3,926	2,935	2,699	-1,227	-31%
Age 55 to 59	2,489	3,659	3,000	2,454	-1,205	-33%
Age 60 to 64	1,540	3,181	3,461	2,540	-641	-20%
Age 65 to 69	1,174	2,088	3,200	2,563	475	23%
Age 70 to 74	1,062	1,326	2,761	2,980	1,654	125%
Age 75 to 79	980	963	1,706	2,505	1,542	160%
Age 80 to 84	620	877	1,104	2,175	1,298	148%
Age 85 and over	540	1,127	1,493	1,998	871	77%
Total Population	39,873	40,755	42,443	43,727	2,972	7%
Total age 5 to 17	8,129	7,507	7,376	7,833	326	4%
share age 5 to 17	20.4%	18.4%	17.4%	17.9%		

	2000-2010	2010-2020	2020-2030
Population Change	882	1,688	1,284
Percent	2%	4%	3%
Average Annual	0.2%	0.4%	0.3%

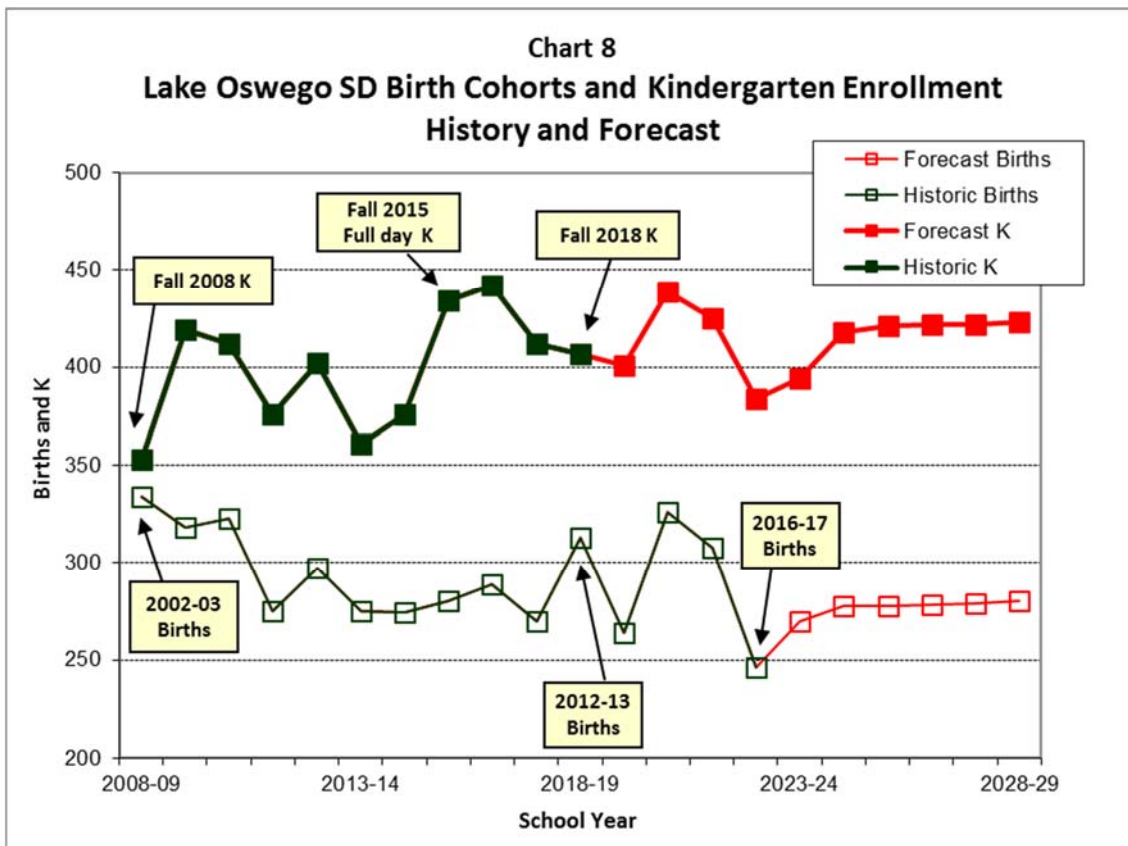
Source: U.S. Census Bureau, 2000 and 2010 Censuses; data aggregated to LOSD boundary by Portland State University Population Research Center. PSU-PRC Forecasts, 2020 and 2030.

The district-wide population forecast by age group is presented in Table 10. Our forecast for 2030 population in the LOSD is 43,737, an increase of 2,972 persons from the 2010 Census (0.35 percent average annual growth). School-age population (5 to 17) is forecast to increase at a slower rate than

overall population. The 326 person growth in school-age population in the period between 2010 and 2030 amounts to a 0.2 percent annual average growth rate.

District-wide Enrollment Forecast

Chart 8 compares the historic and forecast number of births in the District with the historic and forecast number of LOSD kindergarten students. Births correspond to kindergarten cohorts (September to August). Many children move into and out of the District between birth and age five, and not all District kindergarten residents attend LOSD schools. Therefore, trends in kindergarten enrollment have not necessarily followed trends in birth cohorts. For example, the birth cohort eligible to enroll in fall 2018 was larger than the previous several years, yet kindergarten enrollment in fall 2018 was lower than its fall 2016 peak. The ratio of kindergarten enrollment to cohort births has been at or above 1.30 for 10 consecutive years indicating that LOSD consistently gains net immigration of young children between birth and age five. The jump from 1.37 in fall 2014 to 1.55 in fall 2015 was also influenced by full day kindergarten being implemented district-wide at the beginning of the 2015-16 school year.



Two scenarios of future enrollment are presented in Tables 11a and 11b. Both tables contain annual forecasts by grade level and five and ten year summaries by grade level groups. Forecasts in Table 11a are considered a “baseline” because they assume that the District will continue to enroll students under the Open Enrollment policy that was in place for the 2012-13 through 2018-19 school years. The specific assumption in the baseline forecast is that 22 6th grade and 22 9th grade students would be admitted each year. Once admitted, these students may remain enrolled in their school in future years without reapplying. Students may articulate from 8th to 9th grade according to their feeder pattern. However, the open enrollment statute contained a sunset provision, effective July 1, 2019. Therefore, unless the policy is extended in the 2019 legislative session, new students will not be admitted under Open Enrollment for the 2019-20 school year. Forecasts in Table 11b depicts the scenario without new Open Enrollment students.

Elementary enrollments are identical in the two scenarios, remaining within 40 students of the 2018-19 K-5th grade total of 2,858.

Junior high school enrollments fluctuate from year to year under both scenarios. However, by 2021-22 the baseline scenario includes 60 more 6th to 8th grade students than in the alternate scenario shown in Table 11b. Under the baseline scenario, 6th-8th grade enrollment is 115 students greater in 2023-24 compared with 2018-19; under the alternate scenario junior high school enrollment only grows by 55 students in the same five year period.

The biggest difference between the two scenarios occurs among high school grades 9-12. In the baseline scenario high school enrollment is relatively stable, remaining within 31 students (one percent) until 2023-24, and then growing by 75 students (three percent) from 2023-24 to 2028-29 (Table 11a). Keeping all other assumptions the same as in the baseline, without accepting new Open Enrollment students after 2018-19, high school enrollment would fall by 147 students (six percent) to a low in 2023-24 before stabilizing or increasing slightly (Table 11b).

Enrollment at individual schools consistent with the two district-wide forecast scenarios is shown in in Tables 12a and 12b, subject to current boundaries and grade configurations, existing trends, and expected residential development. Most schools are expected to have stable enrollments. Table 12a shows that Lakeridge Junior and Senior High Schools will both grow if the Open Enrollment policy is renewed and new out-of-district students are admitted at historic normal levels. Without Open Enrollment, as in Table 12b, Lakeridge secondary schools may see stable enrollments.

Table 11a
Lake Oswego School District, Baseline Enrollment Forecasts*, 2019-20 to 2028-29

Grade	Actual	Forecast									
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
K	407	401	439	425	384	394	418	421	422	422	423
1	430	430	426	467	452	407	418	443	447	448	448
2	474	451	454	451	494	477	430	441	468	472	473
3	516	496	474	479	476	520	502	452	464	492	496
4	506	539	521	499	504	500	546	527	475	487	517
5	525	527	564	546	523	527	523	571	551	497	510
6	544	573	578	618	599	574	578	574	624	603	546
7	555	550	580	586	627	606	581	585	581	631	610
8	605	566	562	592	598	639	617	592	595	592	643
9	645	638	598	595	626	631	673	650	625	628	625
10	575	639	632	593	590	620	625	667	644	619	622
11	606	570	633	625	587	583	613	618	660	637	612
12	608	588	553	615	607	569	566	595	600	641	619
Total	6,996	6,968	7,014	7,091	7,067	7,047	7,090	7,136	7,156	7,169	7,144
<i>Annual change</i>		-28 -0.4%	46 0.7%	77 1.1%	-24 -0.3%	-20 -0.3%	43 0.6%	46 0.6%	20 0.3%	13 0.2%	-25 -0.3%
K-5	2,858	2,844	2,878	2,867	2,833	2,825	2,837	2,855	2,827	2,818	2,867
6-8	1,704	1,689	1,720	1,796	1,824	1,819	1,776	1,751	1,800	1,826	1,799
9-12	2,434	2,435	2,416	2,428	2,410	2,403	2,477	2,530	2,529	2,525	2,478

	5 Year Change: 2018-19 to 2023-24		5 Year Change: 2023-24 to 2028-29		10 Year Change: 2018-19 to 2028-29	
	Series	Pct.	Series	Pct.	Series	Pct.
K-5	-33	-1.2%	42	1.5%	9	0.3%
6-8	115	6.7%	-20	-1.1%	95	5.6%
9-12	-31	-1.3%	75	3.1%	44	1.8%
Total	51	0.7%	97	1.4%	148	2.1%

*In this scenario 22 6th grade students and 22 9th grade students are admitted under the Open Enrollment policy each year.

Population Research Center, Portland State University, December 2018

**Table 11b
Lake Oswego School District, Enrollment Forecasts*, 2019-20 to 2028-29**

Grade	Actual	Forecast									
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
K	407	401	439	425	384	394	418	421	422	422	423
1	430	430	426	467	452	407	418	443	447	448	448
2	474	451	454	451	494	477	430	441	468	472	473
3	516	496	474	479	476	520	502	452	464	492	496
4	506	539	521	499	504	500	546	527	475	487	517
5	525	527	564	546	523	527	523	571	551	497	510
6	544	551	556	596	577	552	556	552	602	581	524
7	555	550	560	566	607	586	561	565	561	611	590
8	605	566	562	574	580	621	599	574	577	574	625
9	645	616	576	573	586	591	633	610	585	588	585
10	575	639	611	572	569	581	586	628	605	580	583
11	606	570	633	606	568	564	576	581	623	600	575
12	608	588	553	615	589	551	548	559	564	605	583
Total	6,996	6,924	6,929	6,969	6,909	6,871	6,896	6,924	6,944	6,957	6,932
<i>Annual change</i>		-72 -1.0%	5 0.1%	40 0.6%	-60 -0.9%	-38 -0.6%	25 0.4%	28 0.4%	20 0.3%	13 0.2%	-25 -0.4%
K-5	2,858	2,844	2,878	2,867	2,833	2,825	2,837	2,855	2,827	2,818	2,867
6-8	1,704	1,667	1,678	1,736	1,764	1,759	1,716	1,691	1,740	1,766	1,739
9-12	2,434	2,413	2,373	2,366	2,312	2,287	2,343	2,378	2,377	2,373	2,326

	5 Year Change: 2018-19 to 2023-24		5 Year Change: 2023-24 to 2028-29		10 Year Change: 2018-19 to 2028-29	
	Series	Pct.	Series	Pct.	Series	Pct.
K-5	-33	-1.2%	42	1.5%	9	0.3%
6-8	55	3.2%	-20	-1.1%	35	2.1%
9-12	-147	-6.0%	39	1.7%	-108	-4.4%
Total	-125	-1.8%	61	0.9%	-64	-0.9%

**In this scenario the District is unable to admit new students under the Open Enrollment policy after the 2018-19 school year. All other assumptions are the same as in the Baseline scenario.*

Table 12a

Enrollment Forecasts for Individual Schools*, 2019-20 to 2028-29

School	Actual	Forecast										Change
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2018-19 to 2028-29
Forest Hills Elementary	425	430	425	423	417	407	406	411	409	414	430	5
Lake Grove Elementary	391	388	391	386	392	385	398	406	404	403	412	21
Oak Creek Elementary	572	557	556	560	549	545	554	556	557	551	556	-16
Hallinan Elementary	457	452	480	477	464	462	461	458	444	445	456	-1
River Grove Elementary	557	567	566	561	552	562	557	557	549	545	550	-7
Westridge Elementary	456	450	460	460	459	464	461	467	464	460	463	7
Elementary Totals	2,858	2,844	2,878	2,867	2,833	2,825	2,837	2,855	2,827	2,818	2,867	9
Lake Oswego Junior High School	861	841	877	897	900	901	864	853	847	878	871	10
Lakeridge Junior High School	843	848	843	899	924	918	912	898	953	948	928	85
Junior High School Totals	1,704	1,689	1,720	1,796	1,824	1,819	1,776	1,751	1,800	1,826	1,799	95
Lake Oswego High School	1,277	1,256	1,211	1,217	1,203	1,203	1,246	1,247	1,264	1,229	1,197	-80
Lakeridge High School	1,157	1,179	1,205	1,211	1,207	1,200	1,231	1,283	1,265	1,296	1,281	124
High School Totals	2,434	2,435	2,416	2,428	2,410	2,403	2,477	2,530	2,529	2,525	2,478	44
District Totals	6,996	6,968	7,014	7,091	7,067	7,047	7,090	7,136	7,156	7,169	7,144	148

**In this scenario 22 6th grade students at Lakeridge Junior High, an additional 17 9th grade students at Lakeridge High, and 5 9th grade students at Lake Oswego High are admitted under the Open Enrollment policy each year.*

Population Research Center, Portland State University, December 2018.

Table 12b
Enrollment Forecasts for Individual Schools*, 2019-20 to 2028-29

School	Actual	Forecast										Change
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2018-19 to 2028-29
Forest Hills Elementary	425	430	425	423	417	407	406	411	409	414	430	5
Lake Grove Elementary	391	388	391	386	392	385	398	406	404	403	412	21
Oak Creek Elementary	572	557	556	560	549	545	554	556	557	551	556	-16
Hallinan Elementary	457	452	480	477	464	462	461	458	444	445	456	-1
River Grove Elementary	557	567	566	561	552	562	557	557	549	545	550	-7
Westridge Elementary	456	450	460	460	459	464	461	467	464	460	463	7
Elementary Totals	2,858	2,844	2,878	2,867	2,833	2,825	2,837	2,855	2,827	2,818	2,867	9
Lake Oswego Junior High School	861	841	877	897	900	901	864	853	847	878	871	10
Lakeridge Junior High School*	843	826	801	839	864	858	852	838	893	888	868	25
Junior High School Totals	1,704	1,667	1,678	1,736	1,764	1,759	1,716	1,691	1,740	1,766	1,739	35
Lake Oswego High School	1,277	1,251	1,201	1,202	1,183	1,183	1,226	1,227	1,244	1,209	1,177	-100
Lakeridge High School	1,157	1,162	1,172	1,164	1,129	1,104	1,117	1,151	1,133	1,164	1,149	-8
High School Totals	2,434	2,413	2,373	2,366	2,312	2,287	2,343	2,378	2,377	2,373	2,326	-108
District Totals	6,996	6,924	6,929	6,969	6,909	6,871	6,896	6,924	6,944	6,957	6,932	-64

**In this scenario the District is unable to admit new students under the Open Enrollment policy after the 2018-19 school year. All other assumptions are the same as in the Baseline scenario.*

Population Research Center, Portland State University, December 2018.

FORECAST ACCURACY

The best way to measure potential forecast error is to compare actual enrollments with previous forecasts that were conducted using similar data and methodologies. In Table 13, actual LOSD enrollment by grade level in fall 2018 is compared with the 2018-19 forecasts that were prepared by PRC in November 2014.

Three district-wide enrollment scenarios were prepared in 2014 based on different levels of net migration. The middle scenario was characterized as the most likely forecast; individual school forecasts were controlled to the middle scenario at each grade. Actual K-12 enrollment in 2018-19 was one percent higher than the middle scenario after four years. The middle scenario was closest to the K-12 total, and had the smallest mean absolute percentage error (MAPE). However, based on aggregate errors for grades K-5, 6-8, and 9-12, the most accurate forecasts were the high scenario for elementary grades, middle scenario for junior high grades, and low scenario for high school grades.

Table 13
Fall 2018 Enrollment Compared to Previous Forecasts
By Grade Level

Grade	2018-19 Actual Enroll.	Four Year Enrollment Forecasts for 2018-19 ¹								
		Low Scenario			Middle Scenario			High Scenario		
		Fcst.	Diff.	Error	Fcst.	Diff.	Error	Fcst.	Diff.	Error
K	407	365	-42	-10.3%	395	-12	-2.9%	421	14	3.4%
1	430	401	-29	-6.7%	432	2	0.5%	455	25	5.8%
2	474	427	-47	-9.9%	455	-19	-4.0%	477	3	0.6%
3	516	440	-76	-14.7%	470	-46	-8.9%	493	-23	-4.5%
4	506	449	-57	-11.3%	477	-29	-5.7%	498	-8	-1.6%
5	525	478	-47	-9.0%	499	-26	-5.0%	517	-8	-1.5%
6	544	523	-21	-3.9%	540	-4	-0.7%	560	16	2.9%
7	555	533	-22	-4.0%	552	-3	-0.5%	569	14	2.5%
8	605	571	-34	-5.6%	591	-14	-2.3%	610	5	0.8%
9	645	650	5	0.8%	672	27	4.2%	697	52	8.1%
10	575	590	15	2.6%	614	39	6.8%	640	65	11.3%
11	606	599	-7	-1.2%	621	15	2.5%	650	44	7.3%
12	608	591	-17	-2.8%	608	0	0.0%	637	29	4.8%
Total	6,996	6,617	-379	-5.4%	6,926	-70	-1.0%	7,224	228	3.3%
MAPE²				6.4%			3.4%			4.2%

1. Forecasts for 2018-19 by PSU-PRC, baseline 2014-15 enrollment. November 2014.

2. Mean absolute percent error for individual grades K-12.

APPENDIX A

ANNUAL SCHOOL FORECASTS BY GRADE LEVEL

Annual School Forecasts by Grade Level

Forest Hills Elementary

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
K	60	58	63	59	53	60	63	63	63	63	64
1	70	62	60	65	61	55	62	65	65	66	65
2	66	74	66	64	69	65	57	65	69	69	70
3	71	69	78	70	67	72	68	60	68	73	72
4	83	75	73	83	75	71	77	72	64	72	78
5	75	92	85	82	92	84	79	86	80	71	81
Total	425	430	425	423	417	407	406	411	409	414	430

Lake Grove Elementary

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
K	47	50	59	57	53	54	58	59	59	59	59
1	68	52	56	66	64	58	60	64	66	66	66
2	59	72	55	60	70	68	61	63	67	69	69
3	79	63	75	60	65	76	73	66	68	71	75
4	70	81	65	78	62	67	79	76	68	70	73
5	68	70	81	65	78	62	67	78	76	68	70
Total	391	388	391	386	392	385	398	406	404	403	412

Oak Creek Elementary

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
K	68	72	78	83	73	72	77	77	78	78	78
1	83	74	79	84	89	79	77	82	83	84	84
2	93	89	80	86	91	96	86	83	89	90	91
3	97	99	95	86	91	96	101	90	88	95	95
4	109	107	109	104	94	101	105	111	99	97	104
5	122	116	115	117	111	101	108	113	120	107	104
Total	572	557	556	560	549	545	554	556	557	551	556

Annual School Forecasts by Grade Level

Hallinan Elementary

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
K	68	70	78	65	60	63	67	68	68	68	68
1	68	72	74	83	69	63	67	71	72	71	72
2	81	71	76	77	87	71	65	70	74	75	74
3	81	85	75	79	82	92	76	69	74	78	79
4	66	83	88	78	82	85	95	78	72	76	81
5	93	71	89	95	84	88	91	102	84	77	82
Total	457	452	480	477	464	462	461	458	444	445	456

River Grove Elementary

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
K	93	86	92	90	78	79	84	84	85	85	85
1	77	98	91	98	96	84	85	91	90	91	91
2	98	76	99	92	99	97	87	87	93	92	93
3	105	99	78	102	95	102	101	89	89	95	94
4	103	107	101	80	105	97	104	103	91	92	97
5	81	101	105	99	79	103	96	103	101	90	90
Total	557	567	566	561	552	562	557	557	549	545	550

Westridge Elementary

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
K	71	65	69	71	67	66	69	70	69	69	69
1	64	72	66	71	73	68	67	70	71	70	70
2	77	69	78	72	78	80	74	73	76	77	76
3	83	81	73	82	76	82	83	78	77	80	81
4	75	86	85	76	86	79	86	87	81	80	84
5	86	77	89	88	79	89	82	89	90	84	83
Total	456	450	460	460	459	464	461	467	464	460	463

Annual School Forecasts by Grade Level

Lake Oswego Junior High School

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
6	284	282	297	301	283	300	265	272	296	295	263
7	267	287	287	302	307	287	305	269	276	301	300
8	310	272	293	294	310	314	294	312	275	282	308
Total	861	841	877	897	900	901	864	853	847	878	871

Lakeridge Junior High School -- Scenario A: new Open Enrollment students are admitted each year

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
6	260	291	281	317	316	274	313	302	328	308	283
7	288	263	293	284	320	319	276	316	305	330	310
8	295	294	269	298	288	325	323	280	320	310	335
Total	843	848	843	899	924	918	912	898	953	948	928

Lakeridge Junior High School -- Scenario B: no new Open Enrollment Students

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
6	260	269	259	295	294	252	291	280	306	286	261
7	288	263	273	264	300	299	256	296	285	310	290
8	295	294	269	280	270	307	305	262	302	292	317
Total	843	826	801	839	864	858	852	838	893	888	868

Annual School Forecasts by Grade Level

Lake Oswego High School -- Scenario A: new Open Enrollment students are admitted each year

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
9	326	325	286	308	310	325	330	309	327	290	297
10	298	321	321	282	304	306	321	326	305	323	286
11	326	297	319	320	281	302	305	319	325	304	321
12	327	313	285	307	308	270	290	293	307	312	293
Total	1277	1256	1211	1217	1203	1203	1246	1247	1264	1229	1197

Lake Oswego High School -- Scenario B: no new Open Enrollment Students

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
9	326	320	281	303	305	320	325	304	322	285	292
10	298	321	316	277	299	301	316	321	300	318	281
11	326	297	319	315	276	297	300	314	320	299	316
12	327	313	285	307	303	265	285	288	302	307	288
Total	1277	1251	1201	1202	1183	1183	1226	1227	1244	1209	1177

Lakeridge High School -- Scenario A: new Open Enrollment students are admitted each year

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
9	319	313	312	287	316	306	343	341	298	338	328
10	277	318	311	311	286	314	304	341	339	296	336
11	280	273	314	305	306	281	308	299	335	333	291
12	281	275	268	308	299	299	276	302	293	329	326
Total	1157	1179	1205	1211	1207	1200	1231	1283	1265	1296	1281

Lakeridge High School -- Scenario B: no new Open Enrollment Students

Grade	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
9	319	296	295	270	281	271	308	306	263	303	293
10	277	318	295	295	270	280	270	307	305	262	302
11	280	273	314	291	292	267	276	267	303	301	259
12	281	275	268	308	286	286	263	271	262	298	295
Total	1157	1162	1172	1164	1129	1104	1117	1151	1133	1164	1149

APPENDIX B

2013-2017 POPULATION, HOUSING, SOCIAL AND ECONOMIC PROFILE

Population, Housing, Social and Economic Profile

Lake Oswego School District 7J, Oregon

	2008-2012			2013-2017			Compare
	Estimate	CV *	Margin of Error (+/-)	Estimate	CV *	Margin of Error (+/-)	Statistically Different?
POPULATION							
Total population	40,644	●	641	42,182	●	610	**
Percent under 18 years	22.9%	●	1.0%	21.7%	●	1.0%	
Percent 65 years and over	15.7%	●	0.8%	18.3%	●	1.1%	**
Median age (years)	44.4	●	0.9	46.1	●	1.0	**
Percent white alone, non-Latino	86.6%	●	1.7%	84.6%	●	1.6%	
HOUSING							
Total housing units	18,419	●	409	18,700	●	408	
Occupied housing units	17,301	●	368	17,754	●	365	
Owner occupied	12,396	●	448	12,387	●	410	
Percent owner-occupied	71.6%	●	2.0%	69.8%	●	1.9%	
Renter occupied	4,905	●	348	5,367	●	365	
Vacant housing units***	1,118	●	314	946	●	266	
Vacancy rate	6.1%	●	1.6%	5.1%	●	1.4%	
Average household size	2.34	●	0.05	2.36	●	0.04	
Renter households paying more than 30 percent of household income on rent plus utilities	46.1%	●	5.7%	45.8%	●	4.9%	
SOCIAL							
Age 25+ with a bachelor's degree or higher	65.2%	●	2.0%	67.0%	●	1.9%	
Foreign-born population	4,263	●	580	4,301	●	490	
Percent foreign-born	10.5%	●	1.4%	10.2%	●	1.2%	
Age 5+ language other than English at home	5,024	●	727	5,002	●	691	
Percent language other than English	12.9%	●	1.8%	12.4%	●	1.7%	
ECONOMIC							
Median household income (2017 dollars)	\$89,641	●	\$5,139	\$95,067	●	\$5,771	
Per capita income (2017 dollars)	\$56,913	●	\$3,023	\$60,905	●	\$3,351	
Percent of persons below poverty level	6.4%	●	1.4%	5.3%	●	1.5%	

* *Green, yellow, and red* icons indicate the reliability of each estimate using the coefficient of variation (CV). The lower the CV, the more reliable the data. *High reliability* (CV <15%) is shown in green, *medium reliability* (CV between 15-30% - be careful) is shown in yellow, and *low reliability* (CV >30% - use with extreme caution) is shown in red. However, there are no absolute rules for acceptable thresholds of reliability. Users should consider the margin of error and the need for precision.

** Indicates that the two estimates are statistically different based on results of z-test taking into account the difference between the two estimates as well as an approximation of the standard errors of both estimates.

*** Vacant units include those for sale or rent, those sold or rented but not yet occupied, those held for seasonal, recreational, or occasional use, as well as other vacant such as homes under renovation, settlement of an estate, or foreclosures.

Source: U.S. Census Bureau, American Community Survey 5 year estimates. Surveys are collected over a 60 month period. Estimates represent average characteristics over the entire period. Tabulated by Population Research Center, Portland State University, with additional calculations from source data as needed.