2-2017

# Ashland School District: Population and Enrollment Forecasts 2017-18 to 2026-27

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# ASHLAND SCHOOL DISTRICT

# ENROLLMENT FORECAST

# 2017-18 TO 2026-27

Portland State UNIVERSITY

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## FEBRUARY 2017

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# ENROLLMENT FORECAST
# 2017-18 TO 2026-27

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**February 2017**


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## EXECUTIVE SUMMARY

This report presents two district-wide enrollment forecasts by grade level for the Ashland School District (ASD) for the 10-year period between 2017-18 and 2026-27. The forecasts are based upon two different sets of assumptions. The HIGH SERIES forecast assumes that ASD's open enrollment policy continues similar to recent years. The LOW SERIES forecast assumes no new open enrollment for the District after 2016-17, and that non-resident enrollment reverts to levels observed before 2012-13. Individual school forecasts consistent with the HIGH SERIES are also presented for the 10-year period.

***Population Trends***

- Between 2000 and 2010, total population within the ASD grew from 23,596 persons to 24,218: an Average Annual Growth Rate (AAGR) of 0.3 percent. The City of Ashland had a slightly lower AAGR of .2 percent.
- Between 2010 and 2016 the City of Ashland's AAGR was 0.4 percent, higher than the 2000-2010 decade.
- From 1999 to 2015, births to residents of the ASD fluctuated throughout the period, but generally declined. Births peaked in 2000 at 186, and reached their low point in 2014 at 140.

***Economic Trends***

- Over three-quarters of employed ASD residents work within Jackson County. Most other workers within ASD commute to jobs in Josephine or have employers based in Lane, Multnomah or Marion Counties.
- Jackson County added 9,500 jobs between 2002 and 2007, lost 9,620 jobs between 2007 and 2011, and gained back 7,080 jobs between 2011 and 2015.
- Jackson County's unemployment rate rose from 5.6 percent in in 2007 to 12.8 percent in 2009; it then declined to 5.9 percent in 2016.

***Housing Growth and Characteristics***

- Single-family housing development peaked in 1999 at 180 homes and then declined to 106 homes in 2002. SFR permits peaked again in 2005 at 148 and then dropped precipitously, declining to 21 in 2008. Between 2008 and 2015, SFR permits averaged 35 per year.
- During the last five years, most new SFRs have been built in the Helman attendance area, with smaller numbers in Walker and Bellview.
- Multiple Family housing development has been relatively weak for most of the last 10 years, compared to the period of 10 to 20 years ago. However, there are six new developments slated for completion in 2017.

***Enrollment Trends***

- For four of the first five years of the 10-year historical period ASD showed year-by-year district-wide losses, resulting in a decline of 189 students between 2006-07 and 2011-12.
- Between 2011-12 and 2016-17, the trend above reversed. Enrollment increased by 201 students during these years.
- By individual grade over the 10-year historical period, the largest gains were in fourth grade and Kindergarten. The largest losses were in 12th grade.

***District-wide Enrollment Forecast: HIGH SERIES***

- District enrollment increases over each of the ten years of the forecast period, resulting in an increase of 290 students.
- During the first five forecast years, District enrollment increases by 175 students. Grades K-5 show the largest increase during this period.
- During the second five forecast years, District enrollment increases by 115 students. Grades 9-12 show the largest increase during this period.

***District-wide Enrollment Forecast: LOW SERIES***

- District enrollment for the 10 year forecast period declines by 202 students.
- Losses during the period occur in all grade groupings (K-5, 6-8, 9-12).

Table 1 summarizes historic and forecast K-12 enrollments by five-year intervals under the two scenarios. Chart 1 depicts the District's 10-year K-12 enrollment history and the two K-12 forecast scenarios.

**Table 1**
**Historic and Forecast Enrollment**
**Ashland School District**

| | HIGH SERIES | | LOW SERIES | |
|---|---|---|---|---|
| School Year | Enroll-ment | 5 year growth | Enroll-ment | 5 year growth |
| 2006-07 | 2,909 | | 2,909 | |
| 2011-12 | 2,720 | -189 | 2,720 | -189 |
| 2016-17 | 2,921 | 201 | 2,921 | 201 |
| 2021-22 (fcst.) | 3,096 | 175 | 2,695 | -226 |
| 2026-27 (fcst.) | 3,211 | 115 | 2,719 | 24 |
| *AAEG*, 2016-17 to 2026-27* | *1.0%* | | *-0.7%* | |

**Note: Average Annual Enrollment Growth.*
*Source: Historic enrollment, Ashland School District; Enrollment forecasts, Population Research Center, PSU. December 2016.*

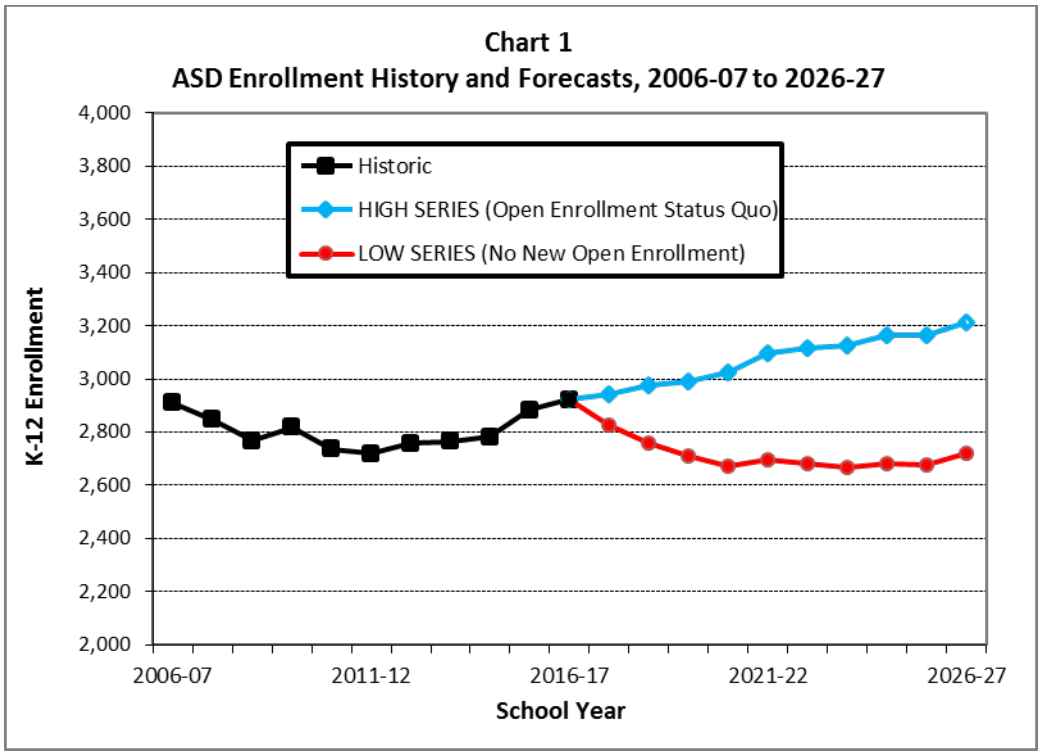
Chart 1
ASD Enrollment History and Forecasts, 2006-07 to 2026-27
K-12 Enrollment
4,000
3,800
3,600
3,400
3,200
3,000
2,800
2,600
2,400
2,200
2,000
Historic
HIGH SERIES (Open Enrollment Status Quo)
LOW SERIES (No New Open Enrollment)
2006-07
2011-12
2016-17
2021-22
2026-27
School Year

## INTRODUCTION

The Ashland School District (ASD) requested that the Portland State University Population Research Center (PRC) prepare enrollment forecasts for use in the District's planning. This study integrates information about ASD enrollment trends with local area population, housing, and economic trends, and presents forecasts for a 10-year horizon from 2017-18 to 2026-27.

In the next few sections, overviews of the local area population, housing and economic trends, and ASD enrollment history will be presented. Following are the methodology and results of the district-wide and individual school enrollment forecasts for the period between 2017-18 and 2026-27.

Appendix A contains a five-page profile comparing the results of the 2000 and 2010 censuses for the District.

The Ashland School District serves the City of Ashland and portions of unincorporated Jackson County. The entire District is within Jackson County.

Information sources for this report include the U.S. Census Bureau, birth data from the Oregon Center for Health Statistics, annual city and county population estimates produced by PRC, county and urban growth boundary (UGB) population forecasts produced by PRC in 2015, county employment trends and forecasts from the Oregon Employment Department, and housing development data from the City of Ashland.

## POPULATION, ECONOMIC, AND HOUSING TRENDS, 2000 to 2016

### *Population Trends*

Between 2000 and 2010, total population within the ASD grew from 23,596 persons to 24,218: an Average Annual Growth Rate (AAGR) of 0.3 percent. The City of Ashland had a slightly lower AAGR of 0.2 percent. Jackson County's AAGR was much higher at 1.1 percent.

Between 2010 and 2016 the City of Ashland's AAGR was 0.4 percent, higher than the 2000-2010 decade, while Jackson County's was lower at 0.8 percent.

Table 2 includes PRC estimates for 2000, 2010, and 2016.

**Table 2**

**City and Region Population, 2000, 2010, and 2016**

| | | | | Avg. Annual Growth Rate | |
|---|---|---|---|---|---|
| | **2000** | **2010** | **2016** | **2000-2010** | **2010-2016** |
| Ashland S.D. Total* | 23,596 | 24,218 | N/A | *0.3%* | *N/A* |
| City of Ashland | 19,610 | 20,095 | 20,620 | *0.2%* | *0.4%* |
| Unincorporated area | 3,986 | 4,123 | N/A | *0.3%* | *N/A* |
| Jackson County | 182,200 | 203,340 | 213,765 | *1.1%* | *0.8%* |

*Source: Population Research Center, Population Estimates*

**School District population determined by PSU-PRC based on aggregation of census blocks within the ASD boundary shapefiles. The 2010 ASD population published by the Census Bureau is 24,282.*

***Economic Trends***

Over three-quarters of employed ASD residents work within Jackson County, with 47 percent working within the area of the school district itself. Forty-four percent work within the City of Ashland and 22 percent commute to Medford. Three percent travel to Grants Pass for work. Table 3 reports the number and share of workers by place of work.

**Table 3**

**Where ASD Residents Are Employed**

| Job Located Within* | Workers | Share |
|---|---|---|
| Jackson County | 6,448 | *78%* |
| Ashland School District | 3,854 | *47%* |
| City of Ashland | 3,630 | *44%* |
| City of Medford | 1,835 | *22%* |
| City of Phoenix | 125 | *2%* |
| City of Central Point | 120 | *1%* |
| Josephine County | 283 | *3%* |
| City of Grants Pass | 220 | *3%* |
| Lane County | 227 | *3%* |
| Multnomah County | 189 | *2%* |
| Marion County | 135 | *2%* |
| All other locations | 947 | *12%* |
| **Total Primary Jobs** | **8,229** | *100%* |

**Note: Indentation indicates that the area is also included wihin the area above it. For example, workers in the City of Ashland are also counted in the Ashland School District.*

*Source: U.S. Census Bureau. 2016. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. 2014 data. Includes at most one (primary) job per resident. http://onthemap.ces.census.gov/*

Between 2002 and 2007, Jackson County added 9,500 jobs –nearly 13 percent growth over the five-year period. Between 2007 and 2011 the County had year-to-year job declines, losing a total 9,620 (over 11 percent) during the four-year period. Job growth began again after 2011, increasing each year through 2015 for a total gain of 7,080 jobs (about 9.5 per cent) during this four-year period. There were 81,750 jobs in Jackson County in 2015, 2,540 fewer than the 2007 peak of 84,290[1].

[1] Oregon Employment Department, OLMIS, Current Employment Estimates. In 2002 there were 74,790 jobs, 2007: 84,290 jobs, 2011: 74,670 jobs, and 2015: 81,750 jobs.

Jackson County's unemployment rate rose from 5.6 percent in 2007 - higher than the U.S. rate of 4.6 percent - to 12.8 percent in 2009 - higher than the 9.3 U.S. rate. The County's unemployment rate has steadily declined since 2009, reaching 5.9 percent in 2016. In 2016, the Oregon and U.S. unemployment rates both stood at 4.9 percent[2].

In December 2016 the Oregon Employment Department reported this concerning recent Jackson County economic conditions:

> Workforce shortages have recently been the hot topic in the Rogue Valley. In theory, tightening labor market conditions may lead to higher wages as employers compete for talent. But in reality, the upward pressure may manifest differently depending on local conditions…Oregon's total payroll per job increased by an impressive 5.7 percent between the second quarters of 2015 and 2016. Local wages increased by 4.3 and 4.0 percent in Jackson and Josephine counties, respectively[3].

Growth in total population does not always lead to school enrollment growth. Each community's particular demographic trends affect the relationship between population change and school enrollment trends. In particular, population by age group, birth trends, characteristics of new housing units and changing household composition affect the number of school-age children in a community.

***Housing Growth and Characteristics***

During the 2000 to 2010 period, the District added over 1,500 housing units, as shown in Table 4. The smaller increase of about 1,000 households (occupied housing units) was due to an increase in vacancy rates, from 6.8 percent in 2000 to 10.3 percent in 2010. The census counts units designated "for seasonal, recreational, or occasional use" as vacant. That category doubled since 2000 and now includes 3.8 percent of the District's housing stock. Vacant units designated "for sale or rent" in 2010 were just 4.0 percent of the District's housing units, an increase from 3.0 percent observed in 2000.

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[2] Oregon Employment Department, OLMIS, Local Area Unemployment Statistics.

[3] Oregon Employment Department, Jackson County Economic Indicators, December 2016.

The net decrease of 376 households with children under 18 during the 10-year period from 2000 to 2010 was a reversal from the previous decade, which had seen a 311 household increase. The share of households with children fell from 30 percent in 1990 to 27 percent in 2000, and to 21 percent in 2010. The average number of persons per household also decreased, from 2.27 in 1990 to 2.20 in 2000, and to 2.08 in 2010. Factors contributing to the decreases in household size and share of households with children include the rapid growth in the population age 45 and over and declining fertility rates.

**Table 4**
**Ashland School District**
**Housing and Household Characteristics, 1990, 2000 and 2010**

| | | | | Change | |
|---|---|---|---|---|---|
| | 1990 | 2000 | 2010 | '90 to '00 | '00 to '10 |
| Housing Units | 8,726 | 10,919 | 12,473 | 2,193 | 1,554 |
| Households | 8,248 | 10,177 | 11,190 | 1,929 | 1,013 |
| Households with children under 18 | 2,458 | 2,769 | 2,393 | 311 | -376 |
| *share of total* | *30%* | *27%* | *21%* | | |
| Households with no children under 18 | 5,790 | 7,408 | 8,797 | 1,618 | 1,389 |
| *share of total* | *70%* | *73%* | *79%* | | |
| Household Population | 18,685 | 22,382 | 23,243 | 3,697 | 861 |
| Persons per Household | 2.27 | 2.20 | 2.08 | -0.07 | -0.12 |

*Source: U.S. Census Bureau, 1990, 2000 and 2010 Censuses; data aggregated to ASD boundary by Population Research Center, PSU.*

Residential building permit activity between 1996-2015 within the City of Ashland is displayed in Chart 2. Single family housing development peaked in 1999 at 180 homes and then declined to 106 homes in 2002. SFR permits peaked again in 2005 at 148 and then dropped precipitously, declining to 21 in 2008. Between 2008 and 2015, SFR permits averaged 35 per year.

Multiple Family Unit permits peaked in 1996 at 108, hovered around 60 at the beginning of the 2000s, and averaged 28 per year between 2003 and 2007. From 2008 through 2015, annual MFU permits averaged less than five per year[4].

[4] Source: U.S. Census Bureau, Residential Construction Branch.

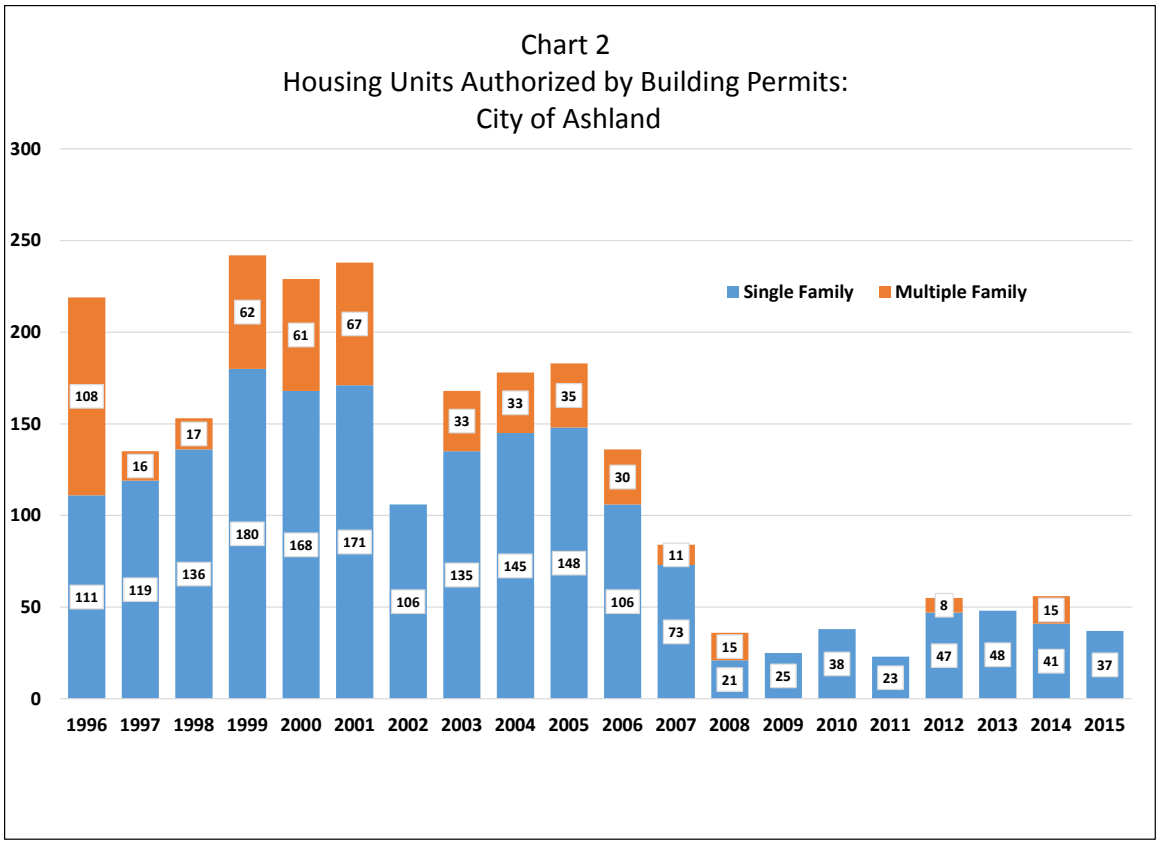



Table 5 details ASD Single Family Residences (SFRs) by elementary school attendance area, built between 2011 and 2016[5]. The Helman ESAA had the largest total number of new SFRs at 118, (58 percent). Walker was second with 61 (30 percent), followed by Bellview at 23 (11 percent).

[5] Includes through Oct 2016 only.

**Table 5**

**ASD New Single Family Residences by Year Built and Elementary School Attendance area**

| Year | Bellview New SFR | Helman New SFR | Walker New SFR | Total New SFR By Year |
|---|---|---|---|---|
| 2011 | 2 | 12 | 7 | **21** |
| 2012 | 5 | 21 | 7 | **33** |
| 2013 | 5 | 28 | 6 | **39** |
| 2014 | 3 | 27 | 20 | **50** |
| 2015 | 5 | 20 | 10 | **35** |
| 2016 | 3 | 10 | 11 | **24** |
| **Total new SFRs by ESAA** | **23** | **118** | **61** | **202** |

*Source: City of Ashland, January 2011 to Oct 2016*

The City of Ashland currently has one new subdivision, Verde Village, under construction. It is located in the Helman ESAA. Verde Village has 15 SFRs completed through 2016 and another 53 planned for completion in 2017, for a total of 68.

Table 6 contains Multiple Family Residences (MFRs) within ASD which are either planned or under construction. They range from eight units (Clear Creek Drive) to 33 units (Garfield). Two MFRs are in the Helman ESSA, totaling 41 units. The other four MFRs are in the Walker ESAA and total 70 units. Anticipated completion for all six projects is 2017.

**Table 6**

**Ashland School District**

**Multiple Family Residences Planned or Under Construction**

| Multiple Family Residence | Anticipated Completion | Units Planned or Under Construction | ESAA |
|---|---|---|---|
| West Hersey | 2017 | 11 | Helman |
| Plaza Central, East, and North | 2017 | 19 | Walker |
| Clear Creek Drive | 2017 | 8 | Walker |
| North Mountain Square | 2017 | 30 | Helman |
| Garfield | 2017 | 33 | Walker |
| Falcon Heights | 2017 | 10 | Walker |

*Source: City of Ashland*

## ENROLLMENT TRENDS

For four of the first five years of the 10-year historical period ASD showed year-by-year district-wide losses, resulting in a decline of 189 students between 2006-07 and 2011-12. Between 2011-12 and 2016-17, the trend reversed: enrollment increased by 201 students during these years, returning the District in 2016-17 to a net increase of 12 students over the 2006-07 starting point.

For the 10-year period, change in enrollment varied among grade level groups. Kindergarten through fifth grade increased by 100 students (nine percent) while grades 6-8 and 9-12 decreased by 12 (two percent) and 47 (four percent) students respectively.

By individual grade over the 10-year period, the largest gains were in fourth grade (40 students) and Kindergarten (30 students). The largest losses were in 12th grade (52 students) and eighth grade (27 students).

Table 7 summarizes the enrollment history for the District by grade level annually for the past 10 years, from 2006-07 to 2016-17.

**Table 7**

## Ashland School District, Historic Enrollment, 2006-07 to 2016-17

| Grade | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **K** | 165 | 180 | 131 | 172 | 151 | 141 | 178 | 182 | 173 | 187 | 195 |
| **1** | 175 | 178 | 183 | 145 | 179 | 175 | 158 | 190 | 175 | 177 | 194 |
| **2** | 178 | 190 | 189 | 200 | 152 | 173 | 176 | 158 | 192 | 184 | 195 |
| **3** | 176 | 182 | 181 | 197 | 205 | 156 | 188 | 193 | 171 | 198 | 192 |
| **4** | 168 | 183 | 178 | 197 | 189 | 212 | 164 | 191 | 198 | 187 | 208 |
| **5** | 214 | 178 | 186 | 198 | 200 | 199 | 217 | 176 | 196 | 206 | 192 |
| **6** | 218 | 222 | 193 | 192 | 203 | 197 | 219 | 223 | 196 | 208 | 224 |
| **7** | 220 | 219 | 232 | 196 | 193 | 218 | 217 | 219 | 225 | 213 | 229 |
| **8** | 240 | 223 | 217 | 240 | 207 | 203 | 215 | 219 | 238 | 224 | 213 |
| **9** | 279 | 272 | 266 | 247 | 270 | 241 | 250 | 234 | 262 | 295 | 272 |
| **10** | 265 | 272 | 264 | 275 | 254 | 280 | 245 | 245 | 246 | 280 | 284 |
| **11** | 277 | 256 | 267 | 258 | 270 | 226 | 261 | 242 | 238 | 234 | 270 |
| **12** | 280 | 264 | 244 | 281 | 248 | 279 | 233 | 263 | 240 | 259 | 228 |
| **PTE*** | 54 | 27 | 36 | 21 | 16 | 20 | 38 | 30 | 32 | 31 | 25 |
| **Total** | **2,909** | **2,846** | **2,767** | **2,819** | **2,737** | **2,720** | **2,759** | **2,765** | **2,782** | **2,883** | **2,921** |
| **K-5** | 1,076 | 1,091 | 1,048 | 1,109 | 1,076 | 1,056 | 1,081 | 1,090 | 1,105 | 1,139 | 1,176 |
| **6-8** | 678 | 664 | 642 | 628 | 603 | 618 | 651 | 661 | 659 | 645 | 666 |
| **9-12** | 1,101 | 1,064 | 1,041 | 1,061 | 1,042 | 1,026 | 989 | 984 | 986 | 1,068 | 1,054 |

| | 5 Year Change: 2006-07 to 2011-12 | | 5 Year Change: 2011-12 to 2016-17 | | 10 Year Change: 2006-07 to 2016-17 | |
|---|---|---|---|---|---|---|
| | **Change** | **Pct.** | **Change** | **Pct.** | **Change** | **Pct.** |
| K-5 | -20 | *-2%* | 120 | *11%* | 100 | *9%* |
| 6-8 | -60 | *-9%* | 48 | *8%* | -12 | *-2%* |
| 9-12 | -75 | *-7%* | 28 | *3%* | -47 | *-4%* |
| **Total** | **-189** | ***-6%*** | **201** | ***7%*** | **12** | ***0%*** |

**Note: Willow Wind part-time equivalency. Willow Wind full-time equivalency is included in grade level figures.*

*Source: Ashland School District.*

***Enrollment at Individual Schools***

During the historical period 2011-12 through 2016-17, Elementary school grades gained 120 students (11 percent)[6]. Walker Elementary accounted for most of the increase with a gain of 62 students (52 percent). Helman added 24 students (20 percent) and Bellview registered a one student loss.

Middle school totals increased during this period by 48 students (eight percent). Ashland Middle School accounted for most of the gain at 81 percent. Grade 6-8 students at John Muir and Willow Wind provided the remaining 19 percent increase (9 students).

Ashland High School added 30 students (three percent) over the period. AHS enrollment in 2016-17 was 1,054 students, 36 percent of the overall District total for that year.

Individual school enrollment trends appear in Table 8.

[6] Includes K-5th grade students at John Muir School, full-time students at Willow Wind, and 5th grade students at Ashland Middle School

**Table 8**

## Ashland S.D., Historic Enrollment by School, 2011-12 to 2016-17

| School | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | | Change 2011-12 to 2016-17 |
|---|---|---|---|---|---|---|---|---|
| Bellview | 312 | 319 | 305 | 303 | 298 | 311 | | -1 |
| Helman | 291 | 310 | 297 | 311 | 310 | 315 | | 24 |
| Walker | 273 | 272 | 297 | 297 | 310 | 335 | | 62 |
| **Elementary Totals[1]** | **1,056** | **1,081** | **1,090** | **1,105** | **1,139** | **1,176** | | **120** |
| | | | | | | | | |
| John Muir School (K-8) | 104 | 95 | 101 | 102 | 126 | 125 | | 21 |
| Willow Wind (K-8 FT) | 154 | 165 | 172 | 174 | 172 | 178 | | 24 |
| Willow Wind (PT)[2] | 20 | 38 | 30 | 32 | 31 | 25 | | 5 |
| | | | | | | | | |
| Ashland Middle School | 539 | 570 | 579 | 576 | 567 | 578 | | 39 |
| **Middle School Totals[3]** | **618** | **651** | **661** | **659** | **645** | **666** | | **48** |
| | | | | | | | | |
| **Ashland High School** | **1,024** | **989** | **984** | **986** | **1,068** | **1,054** | | 30 |
| **District Totals** | **2,720** | **2,759** | **2,765** | **2,782** | **2,883** | **2,921** | | **201** |

*1. Includes K-5th grade students at John Muir School, full-time students at Willow Wind, and 5th grade students at Ashland Middle School*

*2. Part-time students at Willow Wind, included in District totals.*

*3. Includes 6th-8th grade students at John Muir School and full-time students at Willow Wind.*

*Source: Ashland School District.*

***Private and Home School Enrollment and District "Capture Rate"***

Private schools within the ASD enroll local students as well as students from beyond the ASD boundaries; conversely ASD residents attend private schools beyond the District's boundaries, so the number of students enrolled in private schools physically located within the District cannot be used to measure overall private school share. Estimates of private school enrollment for ASD residents come from the Census Bureau — the 2000 Census "long form" and the more recent American Community Survey (ACS). In the 2000 Census, about eight percent of K-12 students living in the District were enrolled in private schools. The ACS estimate based on responses gathered between 2011 and 2015 indicated a similar seven percent share.[7]

Another difference between ASD enrollment and child population can be attributed to home schooling. Home schooled students living in the District are required to register with the Southern Oregon Educational Service District (SOESD), though the statistics kept by the SOESD are not precise because students who move out of the area are not required to drop their registration. Students who enroll in public schools after having been registered as home schooled are dropped from the home school registry. Each year from 2011-12 to 2015-16 there were between 119 and 155 ASD residents registered as home schooled, averaging 137 per year, or about five percent of school-age residents.[8]

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 inter-district transfer rules that were in place prior to 2012-13, students who wanted to attend a public school outside of their resident district had to gain approval from their home district and the district that they want to attend, and that approval must be renewed each year. The ASD consistently had a net gain of students under the inter-district transfers,

[7] Based on the U.S. Census Bureau 2011-2015 American Community Survey, Table B14002. Private school share for grades K-12 was 6.7 percent, with a margin of error (MOE) at the 90 percent confidence level of +/-3.0 percent.

[8] Southern Oregon Education Service District, *November 2016*.

including a net inflow of 79 K-12 students in 2011-12. 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. Because the ASD has designated space for open enrollment each year, the number of non-ASD resident students has grown, reaching 329 in 2016-17. In years for which data is available, fewer than 20 ASD residents enrolled in other districts. Therefore, the net inflow is likely over 300 students. The increase in non-residents between 2011-12 and 2016-17 likely exceeds the District's net growth over the five year period, accounting for all of the 201 student increase and more.

For purposes of forecasting enrollment, the ratios of kindergarten and first grade public school enrollment to overall population in the corresponding ages are very important. These ratios are called "capture rates." Once a student is enrolled in the public schools in first grade, it is very likely that they will continue to be enrolled in subsequent grades, unless their family moves out of the District. Comparing ASD kindergarten and first grade enrollments to the 2000 and 2010 Censuses revealed little or no change in the District's "capture rates." However, kindergarten capture rates have recently increased due to the attraction of full day kindergarten. We estimate that about 87 percent of ASD kindergarten-age residents will enroll in ASD kindergartens throughout the forecast horizon.

## ENROLLMENT FORECASTS

***District-wide Long-series Forecast Methodology***

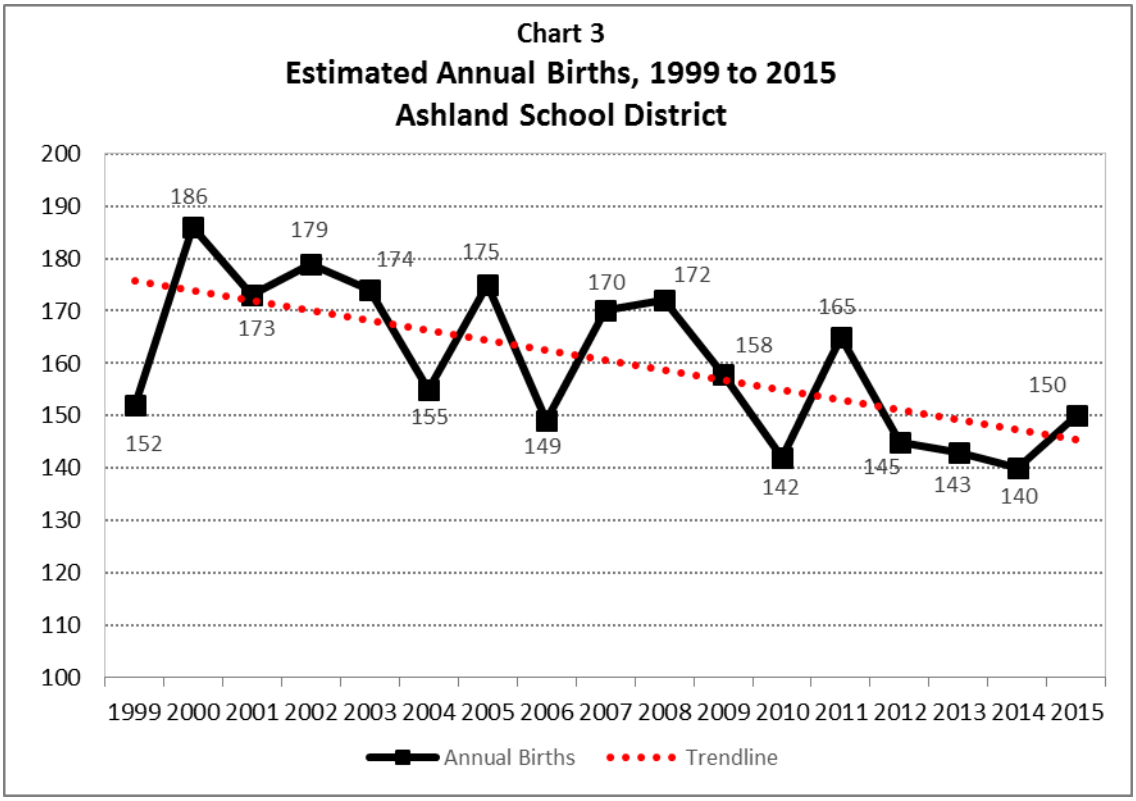
To ensure that enrollment forecasts are consistent with the dynamics of likely population growth within the District, we combine the grade progression enrollment model with a demographic cohort-component model used to forecast population for the District by age and sex. The components of population change 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 were 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 2015, using data from the Oregon Department of Human Services, Center for Health Statistics. Detailed information including the age of mothers is incorporated in the establishment of age-specific fertility rates (ASFRs) for both 2000 and 2010.

***Births and Fertility Rates***

During 1999 to 2015, ASD births zigzagged throughout the period, with a declining trendline. The District's highest peak for births was in 2000 and its lowest point in 2014. During this time, births averaged 160 annually. For the most recent five years, ASD births dropped from 165 in 2011 to 140 in 2014, before increasing to 150 in 2015. The overall 2011 to 2015 decline was nine percent. Oregon births, by comparison, increased by one percent during the same period[9].




The total fertility rate (TFR) is one measure for 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 age-specific fertility rates observed at a given time. The estimated TFR for ASD increased from 1.13 in 2000 to 1.16 in 2010. Comparatively, the TFRs in 2000 were 1.87 for Jackson County and 1.98 for the State, while in 2010 the estimated TFRs were 1.96 for Jackson County and 1.79 for the State.

[9] 1999-2015 birth data from Oregon Center for Health Statistics allocated to ASD boundary by PSU-PRC.

State and national long-term trends indicate declining fertility rates for women under 30, but fertility rates in the 2009 to 2010 period were unusually low, likely due to the poor economy. Due to Ashland's large college student population, rates for women age 18 to 29 are much lower than statewide rates. We increased the 2010 rates slightly in the forecast for all age groups 30 and over, and lowered the rates for women under 30. These adjustments are based on national trends and observed births to ASD residents through 2015. The District's TFR is expected to move from 1.16 in 2010 to 1.18 in 2020.

***Residential Capacity and Development***

Information about residential capacity and current residential developments contribute to the district-wide population and enrollment forecasts and the individual school forecasts. The Greater Bear Creek Valley Regional Plan adopted by the Jackson County Board of Commissioners in November 2011 acknowledged constraints to growth in Ashland including its "independent water supply … some sanitary sewer constraint issues, very steep topography to the west and south, I-5 to the east and limited political support for significant urban growth."[10] Very little of the region's projected population growth was allocated to Ashland, and it was determined that with more efficient use the lands already within Ashland's city limits and urban growth boundary were sufficient to accommodate the anticipated growth for Ashland.

The 2010 Census identified 10,735 housing units with the Ashland UGB. In 2011, the city prepared a buildable lands inventory that found a potential for 2,853 new units within the UGB.[11] The 2012 housing needs analysis found that this capacity would accommodate more than 20 years of development, based on a population growth rate of approximately 0.75 percent per year.[12] In 2015, PRC population forecasts for the Ashland UGB predicted an even lower growth rate averaging about 0.5 percent annually between 2015 and 2035.[13]

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[10] *Greater Bear Creek Valley Regional Plan*. Chapter 2, Regional Growth Planning. Jackson County, 2011.

[11] City of Ashland Buildable Lands Inventory 2011. http://www.ashland.or.us/Files/2011_BLI_approved.pdf.

[12] City of Ashland Housing Needs Analysis. http://www.ashland.or.us/SIB/files/Adopted_2012-2040_HNA.pdf.

[13] *Coordinated Population Forecast, 2015 through 2065, Jackson County Urban Growth Boundaries (UGB) and Area Outside UGBs*. June 2015. https://www.pdx.edu/prc/sites/www.pdx.edu.prc/files/Jackson_Forecast_Report_201506.pdf.

A neighborhood master plan for 94 acres outside of the city limits but within the UGB was approved by City Council on December 15, 2015 following three years of public workshops, neighborhood meetings, public meetings of the Transportation Commission, Planning Commission, and Normal Neighborhood Working Group. The Normal Neighborhood Plan area would accommodate 450 to 550 residential units over a period of 20 or more years.

***School Enrollment and Population***

School enrollment is linked to population in two ways. First, the kindergarten and first grade enrollments at the time of the most recent census (the 2009-10 school year) are compared to the population at the appropriate ages counted in the census. The "capture rate," or ratio of enrollment to population, is an estimate of the share of area children enrolled in ASD schools (see page 22 for rates). Assumptions for capture rates based on census data are used to bring new kindergarten and first grade students into the District.

The other way that historic population and enrollment are linked is through migration. Annual changes in school enrollment by cohort closely follow trends in the net migration of children in the District's population. Once the students are in first grade, a set of baseline rates are used to move students from one grade to the next. A grade progression rate (GPR) is the ratio of enrollment in an individual grade to enrollment in the previous grade the previous year. Baseline rates, usually 1.00 for elementary grades, represent a scenario under which there is no change due to migration. Enrollment change beyond the baseline is added (or subtracted, if appropriate) at each grade level depending on the migration levels of the overall population by single year of age.

***Population Forecast***

Chart 4 displays the 2000 to 2010 estimates and 2010 to 2030 forecasts of ASD population growth attributable to net migration. The 2010 to 2020 decade shows a population increase attributable to net migration of 700 more persons than the previous decade (2000 to 2010). For the 2020 to 2030 decade, net migration continues to grow, reaching 2,700 persons.

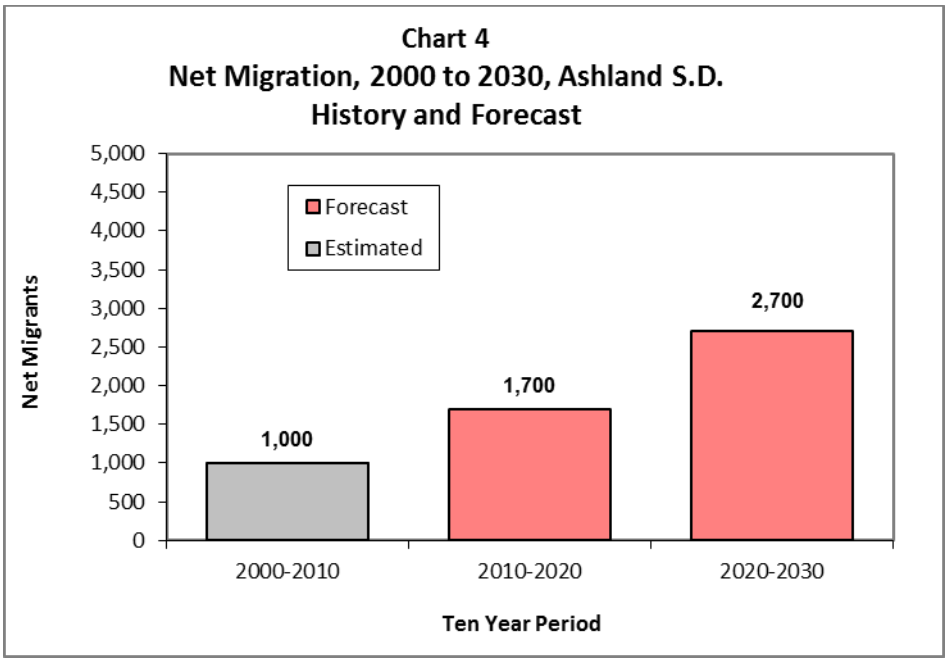


Table 9 details history and forecasts for Ashland School District population by age groups. The 2010 population for the ASD was 24,218, an increase of 622 persons from the 2000 Census (0.3 percent average annual growth rate, or AAGR). The forecast for 2020 population in the ASD is 24,951, an increase of 733 persons from the 2010 Census (0.3 percent AAGR). The 2030 population forecast is 25,987, an additional increase of 1,035 persons (0.4 percent AAGR).

School-age population (5 to 17) decreased by 558 persons between 2000 and 2010, and its share of population declined from 15.3 to 12.6 percent. Between 2010 and 2020 school age population is expected to decrease by another 174 persons, with school-age share dropping to 11.6 percent. This downward trend slows between 2020 and 2030 with a decrease of 24 school-aged persons, producing a lower share of 11.0 percent.

**Table 9**

**Population by Age Group, History and Forecasts, Ashland School District, 2000 to 2030**

| | 2000 Census | 2010 Census | 2020 Forecast | 2030 Forecast | 2010 to 2030 Change | |
|---|---|---|---|---|---|---|
| | | | | | Number | Percent |
| Under Age 5 | 974 | 860 | 843 | 865 | 5 | *1%* |
| Age 5 to 9 | 1,141 | 1,050 | 1,002 | 1,016 | -34 | *-3%* |
| Age 10 to 14 | 1,472 | 1,172 | 1,147 | 1,135 | -37 | *-3%* |
| Age 15 to 17 | 1,002 | 835 | 734 | 708 | -127 | *-15%* |
| Age 18 to 19 | 1,180 | 1,043 | 1,216 | 1,453 | 410 | *39%* |
| Age 20 to 24 | 2,492 | 2,322 | 2,054 | 2,153 | -169 | *-7%* |
| Age 25 to 29 | 1,387 | 1,416 | 1,147 | 1,386 | -30 | *-2%* |
| Age 30 to 34 | 1,104 | 1,132 | 1,136 | 1,035 | -97 | *-9%* |
| Age 35 to 39 | 1,175 | 1,111 | 1,161 | 1,017 | -94 | *-8%* |
| Age 40 to 44 | 1,770 | 1,202 | 1,238 | 1,294 | 92 | *8%* |
| Age 45 to 49 | 2,164 | 1,437 | 1,396 | 1,491 | 54 | *4%* |
| Age 50 to 54 | 2,035 | 1,832 | 1,301 | 1,361 | -471 | *-26%* |
| Age 55 to 59 | 1,345 | 2,326 | 1,616 | 1,608 | -718 | *-31%* |
| Age 60 to 64 | 887 | 2,174 | 1,957 | 1,473 | -701 | *-32%* |
| Age 65 to 69 | 806 | 1,440 | 2,352 | 1,717 | 277 | *19%* |
| Age 70 to 74 | 816 | 931 | 2,085 | 1,901 | 970 | *104%* |
| Age 75 to 79 | 761 | 691 | 1,228 | 1,949 | 1,258 | *182%* |
| Age 80 to 84 | 541 | 568 | 649 | 1,465 | 897 | *158%* |
| Age 85 and over | 544 | 676 | 689 | 960 | 284 | *42%* |
| **Total Population** | **23,596** | **24,218** | **24,951** | **25,987** | **1,769** | ***7%*** |
| Total age 5 to 17 | 3,615 | 3,057 | 2,883 | 2,859 | -198 | *-6%* |
| *share age 5 to 17* | *15.3%* | *12.6%* | *11.6%* | *11.0%* | | |

| | | 2000-2010 | 2010-2020 | 2020-2030 |
|---|---|---|---|---|
| **Population Change** | | **622** | **733** | **1,035** |
| *Percent* | | *3%* | *3%* | *4%* |
| *Average Annual* | | *0.3%* | *0.3%* | *0.4%* |

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

### *District-wide Enrollment Forecast*

Chart 5 compares the historic and forecast number of births in the District with the historic and forecast number of ASD kindergarten students. The trend in births correspond to kindergarten cohorts (September to August) in general; however, external factors, such as migration of children into and out of the District between birth and age five and private school enrollment, can alter the correlations between lagged births and kindergarten enrollment.

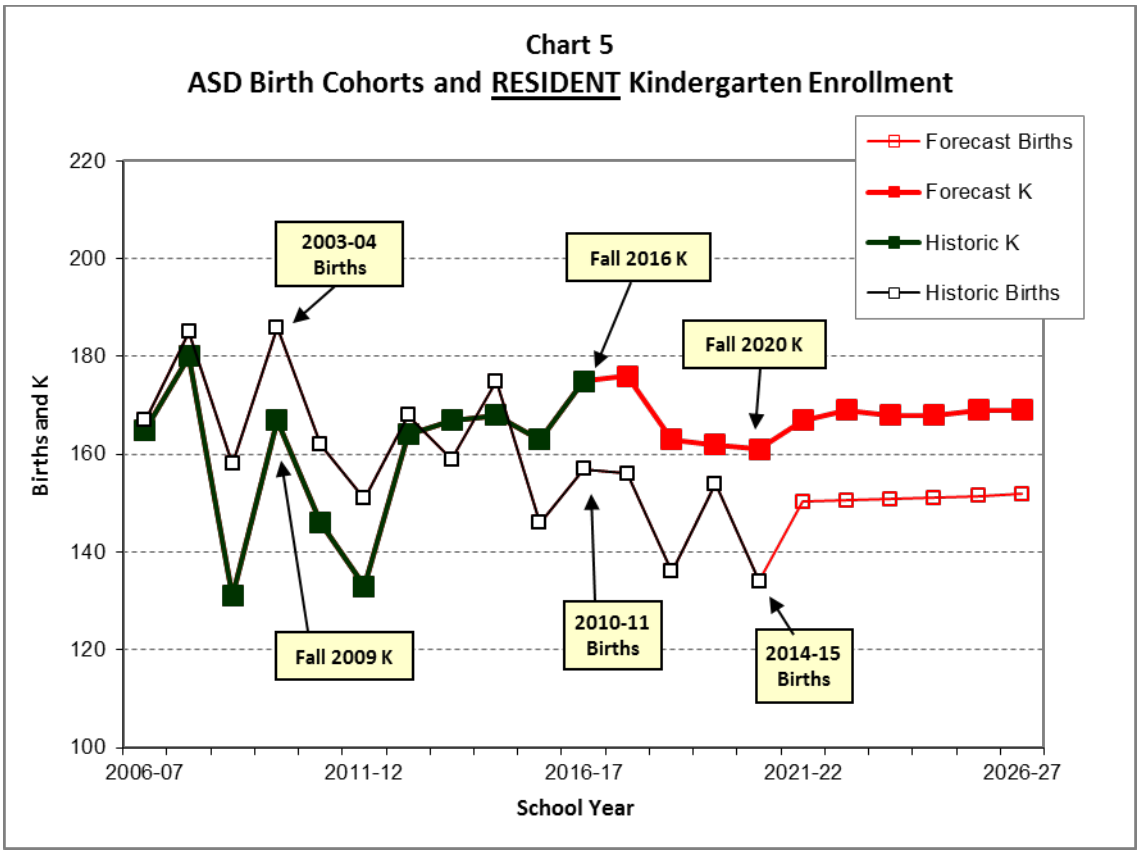


Table 10 and Table 11 contain Enrollment Forecasts based upon two different sets of assumptions. Table 10 (HIGH SERIES) assumes the ASD's open enrollment policy continues similar to recent years. It is assumed that open enrollment results in:

- 20 kindergarten students each year;
- +17 student net change at other elementary grades;
- +11 student net change between 5th and 6th grade;
- +14 student net change between 8th and 9th grade;
- -1 student net change at other high school grades.

Table 11 (LOW SERIES) assumes no new open enrollment for the District after 2016-17, and that non-resident enrollment gradually reverts to levels observed before 2012-13.

In the HIGH SERIES, District enrollment increases over each of the ten years of the forecast period. During the first five forecast years (2017-18 to 2021-22), total district enrollment increases by 175 students (6 percent). Grades K-5 show the largest increase at 80 students (seven percent), Grades 9-12 grow by 69 students (seven percent), and middle school grades go up by 26 (four percent).

During the second five forecast years (2021-22 to 2026-27), total District enrollment increases by 115 students (four percent). Grades 9-12 show the largest increase, 66 students (six percent), and middle school grades grow by 46 students (seven percent). Grades K-5 stay roughly the same during this period.

Over the entire 10-year forecast period District enrollment grows by 290 students (10 percent), reaching 3,211 in 2026-27. Grades 9-12 have the largest percentage growth at 13 percent, followed by grades 6-8 at 11 percent, and K-5 at seven percent.

In the LOW SERIES (Table 11), total District enrollment for the 10 year forecast period declines by 202 students (seven percent), ending in 2026-27 at 2,719. All grade groupings decline: Grades K-5 by -58 students (five percent), Grades 6-8 by -66 (10 percent), and the high school grades by -78 (seven percent).

During the first five years of the forecast (2017-18 to 2021-22) total District enrollment goes down by 226 students (eight percent). Grades 6-8 show the largest decrease, 99 students (15 percent). Grades K-5 and 9-12 register five and six percent declines respectively. This District decline is slightly offset by a 24 student increase during the second five years of the forecast (2017-18 to 2026-27), driven by a 33 student gain in grades 6-8. The total 10-year District change is a decrease of 202 students (7 percent).

## Table 10

## Ashland School District HIGH SERIES[1] Enrollment Forecasts, 2017-18 to 2026-27

| | Actual | Forecast | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Grade** | **2016-17** | **2017-18** | **2018-19** | **2019-20** | **2020-21** | **2021-22** | **2022-23** | **2023-24** | **2024-25** | **2025-26** | **2026-27** |
| **K** | 195 | 196 | 183 | 182 | 181 | 187 | 189 | 188 | 188 | 189 | 189 |
| **1** | 194 | 207 | 208 | 195 | 194 | 193 | 199 | 201 | 200 | 200 | 200 |
| **2** | 195 | 199 | 212 | 213 | 200 | 199 | 198 | 204 | 206 | 205 | 205 |
| **3** | 192 | 190 | 205 | 219 | 220 | 206 | 205 | 204 | 210 | 212 | 211 |
| **4** | 208 | 188 | 202 | 217 | 232 | 233 | 218 | 217 | 216 | 223 | 225 |
| **5** | 192 | 228 | 193 | 208 | 223 | 238 | 239 | 224 | 223 | 222 | 229 |
| **6** | 224 | 210 | 243 | 207 | 223 | 238 | 253 | 254 | 239 | 238 | 237 |
| **7** | 229 | 237 | 219 | 252 | 216 | 232 | 247 | 262 | 263 | 248 | 247 |
| **8** | 213 | 234 | 243 | 225 | 258 | 222 | 238 | 253 | 268 | 269 | 254 |
| **9** | 272 | 230 | 278 | 287 | 266 | 302 | 260 | 278 | 294 | 312 | 313 |
| **10** | 284 | 260 | 225 | 274 | 283 | 262 | 298 | 255 | 274 | 290 | 308 |
| **11** | 270 | 275 | 257 | 223 | 271 | 280 | 260 | 295 | 253 | 272 | 288 |
| **12** | 228 | 261 | 283 | 265 | 230 | 279 | 288 | 268 | 303 | 260 | 280 |
| **PT[2]** | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| **Total** | **2,921** | **2,940** | **2,976** | **2,992** | **3,022** | **3,096** | **3,117** | **3,128** | **3,162** | **3,165** | **3,211** |
| **K-5** | 1,176 | 1,208 | 1,203 | 1,234 | 1,250 | 1,256 | 1,248 | 1,238 | 1,243 | 1,251 | 1,259 |
| **6-8** | 666 | 681 | 705 | 684 | 697 | 692 | 738 | 769 | 770 | 755 | 738 |
| **9-12** | 1,054 | 1,026 | 1,043 | 1,049 | 1,050 | 1,123 | 1,106 | 1,096 | 1,124 | 1,134 | 1,189 |

| | **5 Year Change: 2017-18 to 2021-22** | | **5 Year Change: 2021-22 to 2026-27** | | **10 Year Change: 2017-18 to 2026-27** | |
|---|---|---|---|---|---|---|
| | **Change** | **Pct.** | **Change** | **Pct.** | **Change** | **Pct.** |
| K-5 | 80 | *7%* | 3 | *0%* | 83 | *7%* |
| 6-8 | 26 | *4%* | 46 | *7%* | 72 | *11%* |
| 9-12 | 69 | *7%* | 66 | *6%* | 135 | *13%* |
| **Total** | **175** | ***6%*** | **115** | ***4%*** | **290** | ***10%*** |

*1. Open Enrollment policy continues similar to recent years.*

*2. Part-time Willow Wind students.*

*Population Research Center, Portland State University, December 2016.*

## Table 11

## Ashland School District LOW SERIES[1] Enrollment Forecasts, 2017-18 to 2026-27

| | Actual | Forecast | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Grade** | **2016-17** | **2017-18** | **2018-19** | **2019-20** | **2020-21** | **2021-22** | **2022-23** | **2023-24** | **2024-25** | **2025-26** | **2026-27** |
| **K** | 195 | 181 | 168 | 167 | 166 | 172 | 174 | 173 | 173 | 174 | 174 |
| **1** | 194 | 198 | 187 | 174 | 173 | 172 | 178 | 180 | 179 | 179 | 179 |
| **2** | 195 | 196 | 200 | 192 | 179 | 178 | 177 | 183 | 185 | 184 | 184 |
| **3** | 192 | 186 | 198 | 203 | 198 | 184 | 183 | 182 | 188 | 190 | 189 |
| **4** | 208 | 177 | 187 | 199 | 205 | 203 | 188 | 187 | 186 | 193 | 195 |
| **5** | 192 | 223 | 177 | 188 | 200 | 206 | 207 | 192 | 191 | 190 | 197 |
| **6** | 224 | 195 | 223 | 176 | 188 | 200 | 211 | 212 | 197 | 196 | 195 |
| **7** | 229 | 228 | 195 | 223 | 176 | 188 | 200 | 215 | 216 | 201 | 200 |
| **8** | 213 | 228 | 228 | 195 | 223 | 179 | 191 | 200 | 219 | 220 | 205 |
| **9** | 272 | 210 | 252 | 252 | 225 | 248 | 206 | 220 | 230 | 252 | 253 |
| **10** | 284 | 262 | 207 | 256 | 256 | 233 | 256 | 213 | 228 | 238 | 260 |
| **11** | 270 | 266 | 250 | 202 | 250 | 250 | 228 | 250 | 208 | 223 | 233 |
| **12** | 228 | 251 | 264 | 257 | 208 | 257 | 257 | 235 | 257 | 214 | 230 |
| **PT[2]** | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| **Total** | **2,921** | **2,826** | **2,761** | **2,709** | **2,672** | **2,695** | **2,681** | **2,667** | **2,682** | **2,679** | **2,719** |
| **K-5** | 1,176 | 1,161 | 1,117 | 1,123 | 1,121 | 1,115 | 1,107 | 1,097 | 1,102 | 1,110 | 1,118 |
| **6-8** | 666 | 651 | 646 | 594 | 587 | 567 | 602 | 627 | 632 | 617 | 600 |
| **9-12** | 1,054 | 989 | 973 | 967 | 939 | 988 | 947 | 918 | 923 | 927 | 976 |

| | **5 Year Change: 2017-18 to 2021-22** | | **5 Year Change: 2021-22 to 2026-27** | | **10 Year Change: 2017-18 to 2026-27** | |
|---|---|---|---|---|---|---|
| | **Change** | **Pct.** | **Change** | **Pct.** | **Change** | **Pct.** |
| K-5 | -61 | *-5%* | 3 | *0%* | -58 | *-5%* |
| 6-8 | -99 | *-15%* | 33 | *6%* | -66 | *-10%* |
| 9-12 | -66 | *-6%* | -12 | *-1%* | -78 | *-7%* |
| **Total** | **-226** | ***-8%*** | **24** | ***1%*** | **-202** | ***-7%*** |

*1. No new open enrollment after 2016-17; ASD non-resident enrollment reverts to levels observed before 2012-13.*

*2. Part-time Willow Wind students.*

*Population Research Center, Portland State University, December 2016.*

***Individual School Forecasts***

Forecasts for individual schools are consistent with the HIGH SERIES district-wide growth forecast, under a scenario in which current boundaries and grade configurations remain constant. Of course, school districts typically respond to enrollment change in various ways that might alter the status quo, such as attendance area boundary changes, opening new schools, closing schools, and policy or program changes. If new charter or private schools open, enrollment at District-run schools may be affected. However, the individual school forecasts depict what future enrollments might be under current conditions.

The methodology for the individual school forecasts relies on unique sets of GPRs for each school. New kindergarten classes were forecast each year based on recent trends and birth cohorts within elementary attendance areas. Subsequent grades were forecast using GPRs based initially on recent rates and adjusted based on expected levels of housing growth. The final forecasts for individual schools are controlled to match the district-wide forecasts. Table 12 presents the enrollment forecasts for each school, grouped by school level (elementary, middle, and high).

Elementary schools as a group grow by 83 students (seven percent) over the 10 year forecast period (2016-17 to 2026-27). Helman has the largest increase at 94 students (30 percent) and Walker increases by 58 students (17 percent). Bellview declines by 59 students (19 percent) offsetting nearly 40 percent of the gains at Helman and Walker.

Ashland Middle School gains 63 students (11 percent) during the forecast period, ending in 2026-27 with an enrollment of 641. John Muir and Willow Wind remain stable through the forecast period.

Ashland High School enrollment increases by 135 students (13 percent) during the forecast period.

## Table 12

## Enrollment Forecasts for Individual Schools, 2017-18 to 2026-27[1]

| | Actual | Forecast | | | | | | | | | | Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **School** | **2016-17** | **2017-18** | **2018-19** | **2019-20** | **2020-21** | **2021-22** | **2022-23** | **2023-24** | **2024-25** | **2025-26** | **2026-27** | **2016-17-2026-27** |
| Bellview | 311 | 299 | 289 | 280 | 273 | 268 | 262 | 257 | 255 | 253 | 252 | -59 |
| Helman | 315 | 338 | 326 | 347 | 367 | 384 | 387 | 388 | 394 | 402 | 409 | 94 |
| Walker | 335 | 368 | 382 | 400 | 404 | 399 | 394 | 388 | 389 | 391 | 393 | 58 |
| **Elementary Totals[2]** | **1,176** | **1,208** | **1,203** | **1,234** | **1,250** | **1,256** | **1,248** | **1,238** | **1,243** | **1,251** | **1,259** | **83** |
| | | | | | | | | | | | | |
| John Muir School (K-8) | 125 | 127 | 131 | 128 | 118 | 122 | 125 | 125 | 125 | 125 | 125 | 0 |
| Willow Wind (K-8 FT) | 178 | 184 | 184 | 183 | 181 | 180 | 179 | 178 | 177 | 177 | 177 | -1 |
| Willow Wind (PT)[3] | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 0 |
| | | | | | | | | | | | | |
| Ashland Middle School | 578 | 573 | 596 | 580 | 604 | 595 | 639 | 671 | 673 | 658 | 641 | 63 |
| **Middle School Totals[4]** | **666** | **681** | **705** | **684** | **697** | **692** | **738** | **769** | **770** | **755** | **738** | **72** |
| | | | | | | | | | | | | |
| **Ashland High School** | **1,054** | **1,026** | **1,043** | **1,049** | **1,050** | **1,123** | **1,106** | **1,096** | **1,124** | **1,134** | **1,189** | **135** |
| **District Totals[3]** | **2,921** | **2,940** | **2,976** | **2,992** | **3,022** | **3,096** | **3,117** | **3,128** | **3,162** | **3,165** | **3,211** | **290** |

*1. BASELINE forecast does not include additional students admitted under new open enrollment policy.*

*2. Includes K-5th grade students at John Muir School and Willow Wind (full-time).*

*3. Part-time students at Willow Wind, included in District totals.*

*4. Includes 6th-8th grade students at John Muir School and Willow Wind (full-time).*

*Population Research Center, Portland State University, December, 2016*

## FORECAST ACCURACY

In general, forecast error varies according to the size of the population being forecast and the length of the forecast horizon. The smaller the population and the longer the forecast period, the larger the error is likely to be. In particular, school level forecasts depend on assumptions about the distribution of housing and population growth in small areas within the District over a ten year period, so they should be used as only one of many tools in the planning process. The grade level forecasts are also subject to larger error than the total K-12 enrollments.

The best way to measure potential forecast error is to compare actual enrollments with previous forecasts conducted using similar data and methodologies. In Table 13, actual ASD enrollment by grade level in fall 2016 is compared with 2016-17 forecasts that were prepared in November 2008 and March 2012. As a measure of average error for grade levels and for individual school enrollments, the mean absolute percent error (MAPE) is included in the tables.

The previous forecasts incorporated historic enrollment data series that ended five and eight years before the 2016-17 school year. Neither forecast included an increase in enrollment of non-ASD residents. The report completed during the 2011-12 school year mentioned that the District had decided to participate in the new open enrollment policy that was to begin in 2012-13, but explicitly stated that the impact was unknown, and was not included in the forecasts. We now know that the number of ASD students residing outside of the District and enrolled through transfers increased from 93 in 2011-12 to 329 in 2016-17. In both years very few ASD residents were enrolled in other districts. Therefore, nearly three quarters of the K-12 total shortfall of 320 students shown in Table 13 was due to the increase in non-residents.

**Table 13**

## Fall 2016 Enrollment Compared to Previous Forecasts By Grade Level

| Grade | 2016-17 Actual | Five year forecast[1] Fcst. | Diff. | Error | Eight year forecast[2] Fcst. | Diff. | Error |
|---|---|---|---|---|---|---|---|
| K | 195 | 131 | -64 | *-32.8%* | 166 | -29 | *-14.9%* |
| 1 | 194 | 142 | -52 | *-26.8%* | 179 | -15 | *-7.7%* |
| 2 | 195 | 152 | -43 | *-22.1%* | 186 | -9 | *-4.6%* |
| 3 | 192 | 184 | -8 | *-4.2%* | 185 | -7 | *-3.6%* |
| 4 | 208 | 185 | -23 | *-11.1%* | 179 | -29 | *-13.9%* |
| 5 | 192 | 178 | -14 | *-7.3%* | 180 | -12 | *-6.3%* |
| 6 | 224 | 205 | -19 | *-8.5%* | 187 | -37 | *-16.5%* |
| 7 | 229 | 198 | -31 | *-13.5%* | 202 | -27 | *-11.8%* |
| 8 | 213 | 178 | -35 | *-16.4%* | 167 | -46 | *-21.6%* |
| 9 | 272 | 270 | -2 | *-0.7%* | 244 | -28 | *-10.3%* |
| 10 | 284 | 252 | -32 | *-11.3%* | 249 | -35 | *-12.3%* |
| 11 | 270 | 239 | -31 | *-11.5%* | 226 | -44 | *-16.3%* |
| 12 | 228 | 262 | 34 | *14.9%* | 211 | -17 | *-7.5%* |
| **Total[3]** | **2,896** | **2,576** | **-320** | ***-11.0%*** | **2,561** | **-335** | ***-11.6%*** |
| **MAPE[4]** | | | | ***13.9%*** | | | ***11.3%*** |

*1. Forecast for 2016-17 by Population Research Center, March 2012, based on historic enrollment through 2011-12.*

*2. Forecast for 2016-17 by Population Research Center, November 2008, based on historic enrollment through 2005-06.*

*3. Ashland S.D. total, excluding Willow Wind for comparability with November 2008 forecast.*

*4. Mean absolute percent error for individual grades K-12.*

# APPENDIX A

# 2000 AND 2010 CENSUS PROFILE FOR THE ASHLAND SCHOOL DISTRICT

# 2000 and 2010 Census Profile
## *Ashland School District*

*Approximation based on census blocks*

| POPULATION | 2000 | | 2010 | | Change | |
|---|---|---|---|---|---|---|
| **SEX AND AGE** | | | | | | |
| Total population | 23,596 | *100.0%* | 24,218 | *100.0%* | 622 | *2.6%* |
| Under 5 years | 974 | *4.1%* | 860 | *3.6%* | -114 | *-11.7%* |
| 5 to 9 years | 1,141 | *4.8%* | 1,050 | *4.3%* | -91 | *-8.0%* |
| 10 to 14 years | 1,472 | *6.2%* | 1,172 | *4.8%* | -300 | *-20.4%* |
| 15 to 19 years | 2,182 | *9.2%* | 1,878 | *7.8%* | -304 | *-13.9%* |
| 20 to 24 years | 2,492 | *10.6%* | 2,322 | *9.6%* | -170 | *-6.8%* |
| 25 to 29 years | 1,387 | *5.9%* | 1,416 | *5.8%* | 29 | *2.1%* |
| 30 to 34 years | 1,104 | *4.7%* | 1,132 | *4.7%* | 28 | *2.5%* |
| 35 to 39 years | 1,175 | *5.0%* | 1,111 | *4.6%* | -64 | *-5.4%* |
| 40 to 44 years | 1,770 | *7.5%* | 1,202 | *5.0%* | -568 | *-32.1%* |
| 45 to 49 years | 2,164 | *9.2%* | 1,437 | *5.9%* | -727 | *-33.6%* |
| 50 to 54 years | 2,035 | *8.6%* | 1,832 | *7.6%* | -203 | *-10.0%* |
| 55 to 59 years | 1,345 | *5.7%* | 2,326 | *9.6%* | 981 | *72.9%* |
| 60 to 64 years | 887 | *3.8%* | 2,174 | *9.0%* | 1,287 | *145.1%* |
| 65 to 69 years | 806 | *3.4%* | 1,440 | *5.9%* | 634 | *78.7%* |
| 70 to 74 years | 816 | *3.5%* | 931 | *3.8%* | 115 | *14.1%* |
| 75 to 79 years | 761 | *3.2%* | 691 | *2.9%* | -70 | *-9.2%* |
| 80 to 84 years | 541 | *2.3%* | 568 | *2.3%* | 27 | *5.0%* |
| 85 years and over | 544 | *2.3%* | 676 | *2.8%* | 132 | *24.3%* |
| Median age (years) | 39.5 | | 44.9 | | 5.4 | |
| Under 18 years | 4,589 | *19.4%* | 3,917 | *16.2%* | -672 | *-14.6%* |
| 18 to 64 years | 15,539 | *65.9%* | 15,995 | *66.0%* | 456 | *2.9%* |
| 65 years and over | 3,468 | *14.7%* | 4,306 | *17.8%* | 838 | *24.2%* |
| | | | | | | |
| Male population | 11,058 | *100.0%* | 11,332 | *100.0%* | 274 | *2.5%* |
| Under 5 years | 466 | *4.2%* | 428 | *3.8%* | -38 | *-8.2%* |
| 5 to 9 years | 587 | *5.3%* | 499 | *4.4%* | -88 | *-15.0%* |
| 10 to 14 years | 736 | *6.7%* | 584 | *5.2%* | -152 | *-20.7%* |
| 15 to 19 years | 1,059 | *9.6%* | 852 | *7.5%* | -207 | *-19.5%* |
| 20 to 24 years | 1,193 | *10.8%* | 1,155 | *10.2%* | -38 | *-3.2%* |
| 25 to 29 years | 708 | *6.4%* | 752 | *6.6%* | 44 | *6.2%* |
| 30 to 34 years | 534 | *4.8%* | 536 | *4.7%* | 2 | *0.4%* |
| 35 to 39 years | 524 | *4.7%* | 546 | *4.8%* | 22 | *4.2%* |
| 40 to 44 years | 775 | *7.0%* | 569 | *5.0%* | -206 | *-26.6%* |
| 45 to 49 years | 963 | *8.7%* | 629 | *5.6%* | -334 | *-34.7%* |
| 50 to 54 years | 966 | *8.7%* | 771 | *6.8%* | -195 | *-20.2%* |
| 55 to 59 years | 659 | *6.0%* | 1,046 | *9.2%* | 387 | *58.7%* |
| 60 to 64 years | 409 | *3.7%* | 1,032 | *9.1%* | 623 | *152.3%* |
| 65 to 69 years | 395 | *3.6%* | 700 | *6.2%* | 305 | *77.2%* |
| 70 to 74 years | 377 | *3.4%* | 426 | *3.8%* | 49 | *13.0%* |
| 75 to 79 years | 331 | *3.0%* | 329 | *2.9%* | -2 | *-0.6%* |
| 80 to 84 years | 199 | *1.8%* | 233 | *2.1%* | 34 | *17.1%* |
| 85 years and over | 177 | *1.6%* | 245 | *2.2%* | 68 | *38.4%* |

*Sources: U.S. Census Bureau, 2010 Census, Summary File 1; 2000 Census, Summary File 1.*
*Tabulated by Population Research Center, Portland State University.* www.pdx.edu/prc

# 2000 and 2010 Census Profile
## *Ashland School District*

*Approximation based on census blocks*

| POPULATION (continued) | 2000 | | 2010 | | Change | |
|---|---|---|---|---|---|---|
| Male population (continued) | | | | | | |
| Median age (years) | 37.4 | | 42.8 | | 5.4 | |
| Under 18 years | 2,299 | *20.8%* | 1,911 | *16.9%* | -388 | *-16.9%* |
| 18 to 64 years | 7,280 | *65.8%* | 7,488 | *66.1%* | 208 | *2.9%* |
| 65 years and over | 1,479 | *13.4%* | 1,933 | *17.1%* | 454 | *30.7%* |
| | | | | | | |
| Female population | 12,538 | *100.0%* | 12,886 | *100.0%* | 348 | *2.8%* |
| Under 5 years | 508 | *4.1%* | 432 | *3.4%* | -76 | *-15.0%* |
| 5 to 9 years | 554 | *4.4%* | 551 | *4.3%* | -3 | *-0.5%* |
| 10 to 14 years | 736 | *5.9%* | 588 | *4.6%* | -148 | *-20.1%* |
| 15 to 19 years | 1,123 | *9.0%* | 1,026 | *8.0%* | -97 | *-8.6%* |
| 20 to 24 years | 1,299 | *10.4%* | 1,167 | *9.1%* | -132 | *-10.2%* |
| 25 to 29 years | 679 | *5.4%* | 664 | *5.2%* | -15 | *-2.2%* |
| 30 to 34 years | 570 | *4.5%* | 596 | *4.6%* | 26 | *4.6%* |
| 35 to 39 years | 651 | *5.2%* | 565 | *4.4%* | -86 | *-13.2%* |
| 40 to 44 years | 995 | *7.9%* | 633 | *4.9%* | -362 | *-36.4%* |
| 45 to 49 years | 1,201 | *9.6%* | 808 | *6.3%* | -393 | *-32.7%* |
| 50 to 54 years | 1,069 | *8.5%* | 1,061 | *8.2%* | -8 | *-0.7%* |
| 55 to 59 years | 686 | *5.5%* | 1,280 | *9.9%* | 594 | *86.6%* |
| 60 to 64 years | 478 | *3.8%* | 1,142 | *8.9%* | 664 | *138.9%* |
| 65 to 69 years | 411 | *3.3%* | 740 | *5.7%* | 329 | *80.0%* |
| 70 to 74 years | 439 | *3.5%* | 505 | *3.9%* | 66 | *15.0%* |
| 75 to 79 years | 430 | *3.4%* | 362 | *2.8%* | -68 | *-15.8%* |
| 80 to 84 years | 342 | *2.7%* | 335 | *2.6%* | -7 | *-2.0%* |
| 85 years and over | 367 | *2.9%* | 431 | *3.3%* | 64 | *17.4%* |
| Median age (years) | 40.8 | | 46.4 | | 5.6 | |
| Under 18 years | 2,290 | *18.3%* | 2,006 | *15.6%* | -284 | *-12.4%* |
| 18 to 64 years | 8,259 | *65.9%* | 8,507 | *66.0%* | 248 | *3.0%* |
| 65 years and over | 1,989 | *15.9%* | 2,373 | *18.4%* | 384 | *19.3%* |
| | | | | | | |
| **AREA AND DENSITY** | | | | | | |
| Land Area - Acres[1] | 234,750 | | 231,412 | | | |
| Persons per acre | 0.1 | | 0.1 | | 0.0 | *4.1%* |
| Persons per square mile | 64 | | 67 | | 3 | *4.1%* |
| | | | | | | |
| **RACE** | | | | | | |
| Total population | 23,596 | *100.0%* | 24,218 | *100.0%* | 622 | *2.6%* |
| White alone | 21,706 | *92.0%* | 21,975 | *90.7%* | 269 | *1.2%* |
| Black or African American alone | 132 | *0.6%* | 244 | *1.0%* | 112 | *84.8%* |
| American Indian and Alaska Native alone | 238 | *1.0%* | 221 | *0.9%* | -17 | *-7.1%* |
| Asian alone | 394 | *1.7%* | 462 | *1.9%* | 68 | *17.3%* |
| Native Hawaiian and Other Pacific Islander alone | 32 | *0.1%* | 63 | *0.3%* | 31 | *96.9%* |
| Some Other Race alone | 377 | *1.6%* | 335 | *1.4%* | -42 | *-11.1%* |
| Two or More Races | 717 | *3.0%* | 918 | *3.8%* | 201 | *28.0%* |

*Sources: U.S. Census Bureau, 2010 Census, Summary File 1; 2000 Census, Summary File 1.*
*Tabulated by Population Research Center, Portland State University.* www.pdx.edu/prc

# 2000 and 2010 Census Profile
## *Ashland School District*

*Approximation based on census blocks*

| POPULATION (continued) | 2000 | | 2010 | | Change | |
|---|---|---|---|---|---|---|
| **RACE (continued)** | | | | | | |
| Race alone or in combination with one or more other races [2] | | | | | | |
| White | 22,370 | *94.8%* | 22,832 | *94.3%* | 462 | *2.1%* |
| Black or African American | 252 | *1.1%* | 421 | *1.7%* | 169 | *67.1%* |
| American Indian and Alaska Native | 526 | *2.2%* | 642 | *2.7%* | 116 | *22.1%* |
| Asian | 589 | *2.5%* | 763 | *3.2%* | 174 | *29.5%* |
| Native Hawaiian and Other Pacific Islander | 91 | *0.4%* | 154 | *0.6%* | 63 | *69.2%* |
| Some Other Race | 562 | *2.4%* | 432 | *1.8%* | -130 | *-23.1%* |
| **HISPANIC OR LATINO AND RACE** | | | | | | |
| Total population | 23,596 | *100.0%* | 24,218 | *100.0%* | 622 | *2.6%* |
| Hispanic or Latino | 803 | *3.4%* | 1,200 | *5.0%* | 397 | *49.4%* |
| Not Hispanic or Latino | 22,793 | *96.6%* | 23,018 | *95.0%* | 225 | *1.0%* |
| White alone | 21,339 | *90.4%* | 21,294 | *87.9%* | -45 | *-0.2%* |
| Black or African American alone | 124 | *0.5%* | 230 | *0.9%* | 106 | *85.5%* |
| American Indian and Alaska Native alone | 227 | *1.0%* | 184 | *0.8%* | -43 | *-18.9%* |
| Asian alone | 388 | *1.6%* | 452 | *1.9%* | 64 | *16.5%* |
| Native Hawaiian and Other Pacific Islander alone | 28 | *0.1%* | 60 | *0.2%* | 32 | *114.3%* |
| Some Other Race alone | 79 | *0.3%* | 42 | *0.2%* | -37 | *-46.8%* |
| Two or More Races | 608 | *2.6%* | 756 | *3.1%* | 148 | *24.3%* |
| **RELATIONSHIP** | | | | | | |
| Total population | 23,596 | *100.0%* | 24,218 | *100.0%* | 622 | *2.6%* |
| In households | 22,382 | *94.9%* | 23,243 | *96.0%* | 861 | *3.8%* |
| In family households | 16,038 | *68.0%* | 15,656 | *64.6%* | -382 | *-2.4%* |
| Householder | 5,596 | *23.7%* | 5,647 | *23.3%* | 51 | *0.9%* |
| Spouse [3] | 4,129 | *17.5%* | 4,123 | *17.0%* | -6 | *-0.1%* |
| Child | 5,205 | *22.1%* | 4,681 | *19.3%* | -524 | *-10.1%* |
| Own child under 18 years | 4,317 | *18.3%* | 3,622 | *15.0%* | -695 | *-16.1%* |
| Other relatives | 515 | *2.2%* | 580 | *2.4%* | 65 | *12.6%* |
| Nonrelatives | 593 | *2.5%* | 625 | *2.6%* | 32 | *5.4%* |
| In nonfamily households | 6,344 | *26.9%* | 7,587 | *31.3%* | 1,243 | *19.6%* |
| Householder | 4,581 | *19.4%* | 5,543 | *22.9%* | 962 | *21.0%* |
| Nonrelatives | 1,763 | *7.5%* | 2,044 | *8.4%* | 281 | *15.9%* |
| | | | | | | |
| Population under 18 in households | 4,559 | *99.3%* | 3,908 | *99.8%* | -651 | *-14.3%* |
| Population 18 to 64 in households | 14,587 | *93.9%* | 15,102 | *94.4%* | 515 | *3.5%* |
| Population 65 and over in households | 3,236 | *93.3%* | 4,233 | *98.3%* | 997 | *30.8%* |
| | | | | | | |
| In group quarters | 1,214 | *5.1%* | 975 | *4.0%* | -239 | *-19.7%* |

*Sources: U.S. Census Bureau, 2010 Census, Summary File 1; 2000 Census, Summary File 1.*
*Tabulated by Population Research Center, Portland State University.* www.pdx.edu/prc

# 2000 and 2010 Census Profile
## *Ashland School District*

*Approximation based on census blocks*

| POPULATION (continued) | 2000 | | 2010 | | Change | |
|---|---|---|---|---|---|---|
| **GROUP QUARTERS** | | | | | | |
| Total group quarters population | 1,214 | *100.0%* | 975 | *100.0%* | -239 | *-19.7%* |
| Institutionalized population | 112 | *9.2%* | 67 | *6.9%* | -45 | *-40.2%* |
| Male | 33 | *2.7%* | 28 | *2.9%* | -5 | *-15.2%* |
| Female | 79 | *6.5%* | 39 | *4.0%* | -40 | *-50.6%* |
| Noninstitutionalized population | 1,102 | *90.8%* | 908 | *93.1%* | -194 | *-17.6%* |
| Male | 505 | *41.6%* | 423 | *43.4%* | -82 | *-16.2%* |
| Female | 597 | *49.2%* | 485 | *49.7%* | -112 | *-18.8%* |
| | | | | | | |
| Population under 18 in group quarters | 30 | *0.7%* | 9 | *0.2%* | -21 | *-70.0%* |
| Population 18 to 64 in group quarters | 952 | *6.1%* | 893 | *5.6%* | -59 | *-6.2%* |
| Population 65 and over in group quarters | 232 | *6.7%* | 73 | *1.7%* | -159 | *-68.5%* |

| HOUSEHOLDS | 2000 | | 2010 | | Change | |
|---|---|---|---|---|---|---|
| Total households | 10,177 | *100.0%* | 11,190 | *100.0%* | 1,013 | *10.0%* |
| Family households (families)[4] | 5,596 | *55.0%* | 5,647 | *50.5%* | 51 | *0.9%* |
| With own children under 18 years | 2,636 | *25.9%* | 2,231 | *19.9%* | -405 | *-15.4%* |
| Husband-wife family | 4,129 | *40.6%* | 4,123 | *36.8%* | -6 | *-0.1%* |
| With own children under 18 years | 1,611 | *15.8%* | 1,254 | *11.2%* | -357 | *-22.2%* |
| Male householder, no wife present | 347 | *3.4%* | 420 | *3.8%* | 73 | *21.0%* |
| With own children under 18 years | 229 | *2.3%* | 255 | *2.3%* | 26 | *11.4%* |
| Female householder, no husband present | 1,120 | *11.0%* | 1,104 | *9.9%* | -16 | *-1.4%* |
| With own children under 18 years | 796 | *7.8%* | 722 | *6.5%* | -74 | *-9.3%* |
| Nonfamily households[4] | 4,581 | *45.0%* | 5,543 | *49.5%* | 962 | *21.0%* |
| Householder living alone | 3,225 | *31.7%* | 4,052 | *36.2%* | 827 | *25.6%* |
| Male | 1,301 | *12.8%* | 1,623 | *14.5%* | 322 | *24.8%* |
| 65 years and over | 279 | *2.7%* | 428 | *3.8%* | 149 | *53.4%* |
| Female | 1,924 | *18.9%* | 2,429 | *21.7%* | 505 | *26.2%* |
| 65 years and over | 785 | *7.7%* | 1,003 | *9.0%* | 218 | *27.8%* |
| | | | | | | |
| Households with individuals under 18 years | 2,769 | *27.2%* | 2,393 | *21.4%* | -376 | *-13.6%* |
| Households with individuals 65 years and over | 2,425 | *23.8%* | 3,222 | *28.8%* | 797 | *32.9%* |
| | | | | | | |
| Average household size | 2.20 | | 2.08 | | -0.12 | *-5.6%* |
| Average family size[4] | 2.76 | | 2.66 | | -0.10 | *-3.6%* |

*Sources: U.S. Census Bureau, 2010 Census, Summary File 1; 2000 Census, Summary File 1.*
*Tabulated by Population Research Center, Portland State University.*

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# 2000 and 2010 Census Profile
## *Ashland School District*

*Approximation based on census blocks*

| HOUSING UNITS | 2000 | | 2010 | | Change | |
|---|---|---|---|---|---|---|
| Total housing units | 10,919 | *100.0%* | 12,473 | *100.0%* | 1,554 | *14.2%* |
| Occupied housing units | 10,177 | *93.2%* | 11,190 | *89.7%* | 1,013 | *10.0%* |
| Owner occupied[5] | 5,752 | *56.5%* | 6,259 | *55.9%* | 507 | *8.8%* |
| Owned with a mortgage or a loan | N/A | | 3,939 | *62.9%* | | |
| Owned free and clear | N/A | | 2,320 | *37.1%* | | |
| Renter occupied | 4,425 | *43.5%* | 4,931 | *44.1%* | 506 | *11.4%* |
| Vacant housing units[6] | 742 | *6.8%* | 1,283 | *10.3%* | 541 | *72.9%* |
| For rent | 244 | *32.9%* | 341 | *26.6%* | 97 | *39.8%* |
| For sale only | 89 | *12.0%* | 158 | *12.3%* | 69 | *77.5%* |
| Rented or sold, not occupied | 58 | *7.8%* | 106 | *8.3%* | 48 | *82.8%* |
| For seasonal, recreational, or occasional use | 243 | *32.7%* | 478 | *37.3%* | 235 | *96.7%* |
| For migrant workers | 2 | *0.3%* | 0 | *0.0%* | -2 | *-100.0%* |
| All other vacants | 106 | *14.3%* | 200 | *15.6%* | 94 | *88.7%* |
| | | | | | | |
| Owner-occupied housing units | 5,752 | *56.5%* | 6,259 | *55.9%* | 507 | *8.8%* |
| Population in owner-occupied housing units | 13,551 | | 13,497 | | -54 | *-0.4%* |
| Average household size of owner-occupied units | 2.36 | | 2.16 | | -0.20 | *-8.5%* |
| Renter-occupied housing units | 4,425 | *43.5%* | 4,931 | *44.1%* | 506 | *11.4%* |
| Population in renter-occupied housing units | 8,831 | | 9,746 | | 915 | *10.4%* |
| Average household size of renter-occupied units | 2.00 | | 1.98 | | -0.02 | *-1.0%* |

*1. Land area of the census blocks that approximate the area. The same boundaries were used for both 2000 and 2010; any differences in land area between 2000 and 2010 reflect changes to census block geography.*

*2. In combination with one or more of the other races listed. The six numbers may add to more than the total population, and the six percentages may add to more than 100 percent because individuals may report more than one race.*

*3. "Spouse" represents spouse of the householder. It does not reflect all spouses in a household. Responses of "same-sex spouse" were edited during processing to "unmarried partner."*

*4. "Family households" consist of a householder and one or more other people related to the householder by birth, marriage, or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples unless there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. "Nonfamily households" consist of people living alone and households which do not have any members related to the householder.*

*5. Percentage distribution of ownership categories ("owned with a mortgage or a loan" and "owned free and clear") adds to 100 percent.*

*6. Percentage distribution of vacancy categories ("for rent," etc.) adds to 100 percent.*

*Sources: U.S. Census Bureau, 2010 Census, Summary File 1; 2000 Census, Summary File 1.*
*Tabulated by Population Research Center, Portland State University.* www.pdx.edu/prc