MEMORANDUM

To: Kari Harris
Assistant Superintendent
Fife School District

Date: September 14, 2020
Project: F1868.01.01

From: Tyler Vick
Managing Director

Jerry Oelerich
Senior Analyst

RE: 2020–21 to 2029–30 Enrollment Forecasts Report—Fife School District

At the request of the Fife School District (District), FLO Analytics (FLO) conducted demographic and geographic analyses to assist the District in understanding enrollment trends and to prepare forecasts of future student enrollment. The study was completed through three main tasks: (1) Student Enrollment Assessment, (2) Demographic and Land Use Analysis, and (3) Student Enrollment Forecasting. The forecasts are reported at various levels of geography and from different perspectives of enrollment (see Forecast Perspectives section below). The residence-based and building/program attendance forecasts provide the number of students, by grade group, who will be residing in and attending each of the district's elementary, middle, junior high, and high school (ES, MS, JHS, and HS, respectively) attendance areas and schools/programs through the 2029–30 school year forecast horizon. The attendance area and building/program forecasts are reported annually for the five-year period between the 2020–21 and 2024–25 school years, and a ten-year forecast is also provided. Additionally, forecasts are conveyed annually for the ten-year horizon at the districtwide level, representing the total number of students, living within and outside the district boundary, who attend district schools and programs.

STUDENT ENROLLMENT ASSESSMENT

FLO analyzed historical and current student enrollment for the District; this included mapping the existing attendance area configurations (Figure 1) and the distribution of the student body across the district and surrounding area, based on student residences (Figure 2). Additionally, we evaluated historical grade progression ratios (GPRs), considerations for participation in special or nontraditional programs, demographic characteristics of the student body (e.g., residence in single-family [SF] or multifamily [MF] housing), and differences in enrollment based on residence versus building attendance.

To ensure consistency of enrollment across years, we compared the District-provided Student Information System (SIS) to the Washington State Office of Superintendent of Public Instruction (OSPI) Report Card Enrollment (CEDARS) data tables. All students attending schools that have an attendance area were included in the student universe (i.e., students included in analysis and reporting). The 2019–20 enrollment of the SIS very closely matches the 2019–20 enrollment reported in the OSPI CEDARS. Minor discrepancies between the enrollment data sources are expected because of the dynamic nature of enrollment and reporting methods employed by the District and the OSPI. When considerable discrepancies exist, we remedy them through the application of correction factors, to avoid disruption of enrollment trends between years and cohorts. No significant discrepancies exist; therefore, no correction factors were applied.

The grade group referred to as K-5 or as the elementary grade group is mentioned throughout this memorandum and in the figures. This group contains Endeavour Intermediate (second to fifth grade), Discovery Primary (prekindergarten, kindergarten, and first grade), and Hedden Elementary (second to fifth grade). This grouping serves to consolidate explanations of the historical enrollment and forecasts.

Figure 3 shows districtwide enrollment per individual grade for the previous five years. Overall, districtwide enrollment has grown over the past five years, increasing by 264 students since 2014–15, for an average of nearly 53 additional students each year. The largest gain occurred from the 2016–17 school year to 2017–18, with an increase of 125 students. This was followed by a decrease of 21 students overall in 2018–19, then an increase of 80 students in 2019–20.

Figure 4 tabulates enrollment by school. All schools, except for Discovery Primary School, increased in enrollment over the last five years. Even so, student losses at Discovery were minimal, with a decrease of only 12 students since 2014–15. Hedden Elementary, Surprise Lake, and Columbia all gained just over 30 students over the last five years. Endeavour Intermediate saw an increase of 70 students, with most of that increase occurring between 2018–19 and 2019–20 (47 students). Fife HS experienced the largest enrollment increase: 91 students from 2014-15 to 2019-20. Years 2014–25 to 2015–16 and 2016–17 to 2017–18 showed the strongest enrollment gains, with 59 and 42 additional students, respectively. Since then, enrollment gains have steadied, with 2019–20 showing a decline of nine students.

Based on our analysis of districtwide transfers (Figure 5), a total of 426 students who live outside the district boundary, representing 11.1 percent of enrollment, transfer into district schools. Overall, 108 students residing within the district boundary transfer to a school or program (in the district) different from their residence school, which is based on the attendance area in which they live. This amounts to a districtwide intradistrict transfer rate of 3.2 percent. Transfers occur within all grade groups, but the largest percent of transfers occurs within the K–5 grade group, with an intradistrict transfer rate of 5.7 percent. As depicted in the residence-attendance matrices (Figures 6 through 8), transfer rates also differ per school/program. For instance, ES attendance areas have transfer-out rates that range from 0 percent (Discovery ES) to nearly 11 percent (Endeavor Intermediate). Only 16 students transferred out of Fife HS. From the perspective of building attendance, the ESs have transfer-in rates that range from as low as 8.9 percent (50 students transfer into Discovery ES) to 22.6 percent (124

students transfer into Hedden ES). Endeavor Intermediate saw a 10.7 percent transfer-in rate last year. These transfer rates can help reveal patterns of student choice or quantify district policies. Transfer rates at the MS and JHS levels are nearly equal, with each school showing 11.0 percent of their enrollment coming to them from outside the district. Of the 868 students who attend Fife HS, 140, or 16.1 percent, of students come from outside the district.

DEMOGRAPHIC AND LAND USE ANALYSIS

To incorporate overarching factors that underpin student enrollment, FLO reviewed and analyzed historical, current, and projected demographic characteristics; trends of population change over time; current land use policies; and anticipated residential development. For these efforts, land use data (e.g., construction permits, zoning, comprehensive plans) and demographic information (e.g., births, female population of childbearing age) are gleaned from a variety of sources, chief of which are the regional, county, and municipal planning departments that manage and track land use in the district. For more details, see the Data Sources section below.

Note that municipal land use data are not always available; unincorporated census-designated places, which do not possess planning departments, do make up part of the district. Such places include Fife Heights and Lakeland South. Key development data acquired are presented in Figure 9, which depicts the locations of SF and MF that are currently in construction or are expected to have been built by 2029.

To better understand current land use based on the aforementioned data, as well as the potential for population growth or contraction, FLO interviewed planners from Pierce County, the City of Fife, the City of Milton, and the City of Edgewood to discuss foreseeable residential growth (or decline) in the district through the 2029–30 forecast horizon. FLO obtained land use and development data from each of these municipalities. Planners indicated that they are not expecting changes to zoning or buildable lands that would lead to a sustained increase in residential development within the school district boundary. Most of the district is already built-out, so much of the additional development in the next ten years is forecasted to be smaller infill subdivisions or single units.

The current projects in progress include a 297-unit MF development at 207 Meridian Avenue E. (also known as 207E), and a moderately sized 61 unit SF subdivision near the intersection of Jovita Boulevard E. and 109th Avenue Court E. 207E is currently under construction and likely will be completed within the next five years. The construction of the SF development may linger into the second half of the forecast period. Based on current permitting data, another area of interest lies in the northwest side of the district, near the intersection of 12th Street NE and 58th Avenue NE. Eight SF units are currently permitted and are likely to be completed within the next five years. The remaining SF permit data [represent areas that] are scattered across the central portion of the district.

Based on overarching population and housing trends, as well as current and projected rates of development, FLO estimates the number of housing units by type that may be constructed during the 2019–20 to 2024–25 and 2024–25 to 2029–30 periods (Figure 9). We anticipate 471 units in the first five years, followed by 177 units in the second five years of the forecast horizon. The reason for the disparity in estimated housing units between the two periods is the planned MF development at 207

Meridian Avenue E. Based on the limitations on the amount of land that is suitable for residential development, considering environmental constraints (e.g., wetlands), available infrastructure (e.g., sewer lines), and overarching land use policies (e.g., protection of agricultural lands), we do not anticipate the rate of development to increase greatly.

Housing type is an important indicator of the number of students that a housing unit can be expected to yield. For instance, on average, SF housing units generate more students per unit than MF housing units. Factors that contribute to student generation rates (or yields) include the size of housing units, the number of bedrooms, housing costs, and neighborhood demographics. We assessed residential housing units throughout the district and determined that, of students enrolled in district schools in 2019–20, 74.8 percent reside in SF housing units and 25.1 percent in MF housing units.

FLO defines SF and MF housing in accordance with the U.S. Census American Community Survey (ACS) Subject Definitions and other sources of demographic research and population forecasts (e.g., Portland State University Population Research Center). SF housing includes one-unit structures that are fully detached from other housing, as well as attached dwellings (e.g., row houses and townhouses). In the case of attached units, in order to be classified as a SF structure each must be separated from the adjacent unit by a ground-to-roof wall, and units must not share heating/air-conditioning systems or utilities. MF housing is defined as residential buildings containing two or more housing units that do not have a ground-to-roof wall and/or have common facilities (i.e., attic, basement, heating, plumbing).

Average student generation rates vary by geographic location in the district and by housing subtypes (e.g., SF detached, townhome, duplex, multiunit apartments). We determine student generation rates for district subregions, typically U.S. Census block groups, which contribute to districtwide averages per SF and MF housing units. Based on currently available residential housing data, average student generation rates for the district were estimated to be 0.49 students per SF housing unit and 0.15 students per MF housing unit (Figure 10).

The number of students enrolled in a district is largely influenced by the number of school-aged children residing within the district boundary. We compare the number of historical live births occurring in the district from the Washington State Department of Health (WA DOH) to historical kindergarten class sizes to determine annual kindergarten-to-birth ratios (i.e., the number of kindergarteners who enroll with the District in comparison to the number of live births within the district boundary). These values, in combination with age-group-specific population projections of childbearing-aged women residing in the district, allow us to forecast of the number of anticipated births in the district, and thus the number of kindergarteners anticipated in future school years. Figure 11 depicts the number of live births in the district, kindergarten class sizes that include all enrolled students, and resulting ratios of kindergarteners to births, including both historical values and our forecasts.

The progression of students from one grade to the next is a significant determinant of future enrollment. We assess how cohort sizes change over time by calculating GPRs—the ratio of enrollment in a specific grade in a given year to the enrollment of the same age cohort in the previous

year. For instance, when 150 kindergarteners in 2017 become 140 first graders in 2018, this yields a GPR of 0.93. GPRs quantify how cohort sizes change as students progress to subsequent grades by considering that not all students advance to the next grade and new students join existing cohorts. A GPR value greater than 1 indicates that the student cohort increased in size from one grade to the next. Such a result may be due to students moving into the district and/or students choosing to transfer into the district from other districts (public or private). Conversely, a GPR value less than 1 indicates that the student cohort decreased in size from one grade to the next. This may be due to students moving out of the district, students choosing to transfer to other districts, or students not advancing to the next grade. A review of GPRs over time helps form the foundation of future enrollment forecasts. Figure 12 depicts the GPRs for all students enrolled in the district from 2015–26 to 2019–20. The five-year GPR averages show that nearly all cohorts in the district gain students as they move from grade to grade; in the absence of any other information, this indicates a steadily growing district. The only grade transition that registers below 1 is the movement from 11th to 12th grade. However, over the past two years, the GPR for this transition has been above 1. Important transitions (5–6, 7-8, and 9–10) are also bolded. Each shows a GPR that is consistently above 1. Also, when looking at how each year fares, each average at or above 1 indicates another growing district.

ENROLLMENT FORECASTS

Summary

- Between the 2019–20 and 2029–30 school years, districtwide enrollment (headcount) is forecasted to increase from 3,843 to 4,268, or by 11 percent. Figure 13 shows the annual districtwide building attendance forecasts for the low-, medium- (preferred), and high-growth series. All subsequent figures focus on the medium-growth series, as it represents the most likely enrollment outcomes based on currently available data and our analysis.
- Figure 14 disaggregates the annual districtwide building attendance forecasts by grade group. It is important to note that because of the large range in enrollment between grade groups, a stacked graph, instead of the more traditional line chart, is used to describe forecasts by grade group. In the stacked graph, the larger the enrollment of a grade group, the larger the area it corresponds with. For example, K-5 represents the largest share of the enrollment; this translates to the largest area. Building enrollment totals are listed in the figure, with highlights bulleted below.
  - K–5 enrollment from 1,754 to 1,941 (10.7% increase)
  - 6–7 enrollment from 590 to 688 (16.4% increase)
  - 8–9 enrollment from 610 to 658 (7.7% increase)
  - 9–12 enrollment from 889 to 982 (10.6% increase)
- In comparison to the previous two figures, Figure 15 provides districtwide residence-based forecasts per individual grade. These forecasts represent the number of students expected to reside in the district (for more details, see the Forecast Perspectives section below). Figure 15 provides additional insight into potential enrollment conditions in the district by adding the

students who reside outside the district, resulting in annual building attendance forecasts per grade.

- Figure 16 provides the districtwide attendance-based forecasts per individual grade. This figure represents the expected number of students in each grade attending district schools and includes students who reside outside the district.
- Based on the geographic distribution of students, the residence-based forecasts are aggregated to attendance areas per grade group. Figure 17 provides annual forecasts of students residing in each of the ES, MS, JHS, and HS attendance areas. This will not include Open Doors.
- Building/program attendance forecasts are derived from the residence-based forecasts using an analysis of the rates of intradistrict transfer (e.g., Figures 6 through 8), rates of out-of-district student enrollment (Figure 5), and District policies concerning student placement. Figure 18 provides annual forecasts of students attending each of the ES, MS, JHS, and HS buildings/programs.

Detailed Results

As previously mentioned, the relationship between the number of births occurring in the district and future kindergarten class sizes is vitally important to forecasting student enrollment. An increasing number of births will typically correlate to increases in enrollment and vice versa. Figure 11 shows the relationship between kindergarten enrollment and related births five years prior.

From 2011 to 2015, births have typically hovered near 300 per year. But recently, from 2016 to 2019, births have seen an uptick, with the average climbing from 306 (2011 to 2015) to 325 (2016 to 2019). The 2016-to-2019 kindergarten enrollment does not correlate directly to births, but enrollment still trends generally upward. It is worth noting that 2013 recorded the lowest level of births, translating to a low kindergarten enrollment year in 2018, which is what we would normally, but not always, expect to see. Typically, we focus heavily on population forecasts and historical data to create a variety of scenarios for birth forecasts. The same is done here, but because the school district is split between two counties, a blended approach is used, with Pierce County being more heavily weighted than King County. Using this method, we expect to see a steady climb from 317 births in 2020 to 333 births in 2025. After creating a birth forecast and before starting on a kindergarten forecast, we calculate a capture rate (the percentage of births that transition to kindergarten in the district). Like the birth forecast, we look at how this capture rate has developed in the past to inform the future. In this case, we settled on the three-year weighted average of 93.5 percent. Kindergarten enrollment is expected to dip next year, based on the combination of the calculated capture rate and sluggish 2015 births, then steadily climb to an expected enrollment of 312 students in 2030. Both 2023 and 2025 are forecasted to present a slight interruption to the forecast increases with slightly lower kindergarten enrollment. This is due to lower births in 2018 (actual) and in 2020 (anticipated).

Districtwide enrollment is forecasted to increase from 3,843 in 2019–20 to 4,268 in 2029–30 (Figure 13). However, this gain of 425 students (11%) is not distributed evenly throughout the ten-year period. Over half of the enrollment gains are realized in the first five years, with growth becoming curtailed somewhat in the second five-to-ten-year period. From a grade group perspective, most of

the enrollment gains over the ten-year period are seen in the K-5 grouping, with an increase of 187 students. This is due to the forecast increase in births along with the expectation that historically positive GPRs at the elementary grade level will continue to remain above 1. Much of the elementary increase is expected within the first five years of the forecast, with enrollment slowing after. It is anticipated that the 6–7 grade group will see slow increases within the first five years (27 students), followed by an acceleration in the second five years (71 students) as larger K-5 groups matriculate into the higher grades. The 8–9 grade group is also forecast to see enrollment increases, 48 students in total, but at a lesser degree than any of the other groups, likely because of a large 2019–20 eighth-grade class moving into HS within the first half of the forecast. The HS grouping is expected to see an increase of nearly 100 students by 2029–30, with a roughly even split between the first and second halves of the forecast.

Figures 17 and 18 take the by-grade forecasts from Figures 15 and 16 and aggregate up to each individual attendance boundary for both the residing and attending counts. Over the first half of the forecast, Discovery ES is expected to steadily increase through 2022–23, then level off for the remaining two years. Enrollment is expected to increase at Discovery only slightly during the 2025–26 to 2029–30 period, adding roughly ten students over the five years. Endeavour Intermediate and Hedden ES enrollments are forecasted to remain mainly flat for the first few years before increasing in 2024–25. Enrollment at the schools should very gradually increase for the next two years, before slight decreases occur over the last three years of the forecast. Columbia JHS is forecasted to experience slight declines through 2023–24 before seeing a bump upward in 2024–25. While enrollment will fluctuate over the second half of the forecast, it generally trends upward over 2019–20 counts. Surprise Lake MS enrollment remains flat over the first two years of the forecast before seeing a surge in 2022–23 and again in 2023–24. After 2023–24 there may be some year-to-year variation in enrollment increases/decreases, but the second half of the forecast period generally trends upward. Finally, Fife HS is expected to gain enrollment during nearly every year of the forecast period, with gains in both the first and second five years of the forecast.

Figure 19 applies our prekindergarten estimates to the total enrollment. Our approach was to calculate the ratio of historical prekindergarten enrollment to historical total enrollment. This worked out to 1.4 percent to 2 percent per year. Next, we calculated both straight and weighted averages for the last two to five years and determined that a three-year weighted average would be most representational for the final calculation (1.7%). The result is a prekindergarten enrollment that gradually increases from 67 students in 2020–21 to 73 students in 2029–30.

The potential effects of COVID-19 on district enrollment are not considered in this forecast analysis; it is too early to accurately predict the magnitude of the coronavirus's impacts on the economy, fertility rates, and residential development, among other factors, that contribute to student enrollment. Much depends on how quickly the region returns to pre-COVID-19 conditions, and that is very uncertain at this time. Generally, the pandemic is expected to lead to a decline in fertility rates, and thus may result in dampened enrollment growth, or even decline.

METHODS

Demographic Terms

While both projections and forecasts represent future enrollment, the methods of prediction differ. Enrollment projections are based on past and current patterns of change and the expectation that these trends will continue into the future. For example, historical enrollment data for an ES show an increase from 250 students in 2017, to 265 students in 2018, and to 275 students in 2019. The average rate of change observed over the past three years could be used to prepare a projection of enrollment in 2020, assuming that the trend of growth continues into the future. In other words, a projection does not predict future trends or what will actually occur, but rather indicates what will happen if the past and current trends that underpin the projection continue into the future. In this sense, projections are strictly mathematical.

In comparison, forecasts are based on past and current patterns of change but also incorporate predictions regarding how trends may change in the future. It is common to prepare multiple sets of projections that capture a range of scenarios, such as decreasing enrollment due to declining fertility rates or rapid enrollment growth due to residential development and in-migration, so that practitioners may evaluate a range of potential outcomes. Sets of projections differ based on the modification of one or more variables, including birthrates, student generation/yield rates per housing type, and rates of residential housing development. Forecasts represent the set of projections deemed most likely to materialize based on the analysis and decision-making of practitioners. In this sense, forecasts represent the art of the science of demography, hence FLO prepares enrollment forecasts almost exclusively.

Forecast Perspectives

There are two basic types of student enrollment forecasts:

1. Building/program attendance forecasts represent the number of students expected to attend a specific school building or program. Districts often refer to these values as "actual" enrollments or the number of "students in desks." Building/program attendance forecasts account for out-of-district students, intradistrict transfers, special programs, etc.

2. Residence forecasts represent the number of students expected to reside in a certain region, whether it be the district as a whole or individual attendance areas. Residence forecasts are generally more accurate than building/program attendance forecasts because the former are not subject to the variability of student choice, school district policies, movement of program locations, and constraints on inter- and intradistrict transfers imposed by building capacities.

Residence forecasts are rooted in student location and, therefore, with the proper granularity, can be allocated to boundaries other than the current attendance areas. For instance, our residence forecasts are produced at the granular geographic level of the U.S. Census block group, of which there are 56 in the district. These small-area forecasts can be accurately aggregated to larger geographies, such as prospective attendance area boundaries. Despite these advantages, residence forecasts do not always suit district needs.

Building/program attendance forecasts are often more useful, albeit less reliable, because they reflect realized enrollment by capturing the inter- and intradistrict transfers. At the districtwide level, the building/program attendance forecasts are always higher than the forecast of students residing in the attendance areas. This is due to the segment of students who live outside the district boundary but attend district schools. When comparing building/program attendance and residence-based forecasts for an individual school, it is important to recognize that the two may vary.

Forecasting Methodologies

Initial Steps

Our first step in preparing enrollment forecasts is to perform a detailed assessment of historical enrollment trends (i.e., 2014–15 to 2019–20), as well as the geographic distribution of the 2019–20 student body. The results of this enrollment assessment feed into our enrollment forecasts, which use a combination of the demographic cohort-component model to forecast population for the district by age and sex, and the enrollment rate method, which advances each age cohort through successive grade levels. In the former, the components of population change are births, deaths, and migration.

Enrollment Rate Method

In terms of linking historical enrollment trends to future enrollment forecasts, the enrollment rate method is first used to assess the percentage of five-year-olds living within the district boundary in the 2019–20 school year who were enrolled in kindergarten at district schools. This is referred to as the kindergarten enrollment (or "capture") rate. Separate enrollment rates are similarly computed for each of the other age/grade cohorts present in 2019–20 (i.e., first through 12th grades). These cohort-specific enrollment rates—modified based on certain assumptions (e.g., dropout rates in HS)—are the primary basis for determining the rate at which each given cohort will be enrolled in the future, and can be thought of as a means of calibrating the future enrollment forecasts. For example, the 2019–20 third-grade enrollment rate of eight-year-olds heavily informs the eighth-grade capture rate of the projected district population of 13-year-olds in 2024–25.

This is a widely prescribed forecasting method and is especially useful in one-year forecasts and districts without a large degree of year-to-year cohort variability. With minor refinements, our forecasts apply the average of the K–5 capture rates for the 2019–20 cohorts to new cohorts matriculating in kindergarten in the 2020–21 school year and later.

Projecting Net Migration

Another way historical enrollment data are used is by leveraging knowledge of the geographic distribution of the 2019–20 student population in order to calculate enrollment rates at the subdistrict level. To do this, FLO divided the district into regions, each with a sufficient number of students at each grade level to permit statistical calculations. These subdistrict cohort-specific enrollment rates were applied as a baseline to new district school-age children projected to be added because of net in-migration over the next five years. Note that the future migration rate and population projections used, which were largely informed by Esri's 2019/2024 U.S. Demographics, were prepared at an even

finer geographic resolution (U.S. Census block groups), and at units that are generally socioeconomically distinct from each other.

The Esri 2019/2024 U.S. Demographics dataset is prepared using recent growth trends derived from U.S. Census and state/local sources and, in tracking growth, accounts for regional land use and comprehensive plans, publicly available development data (e.g., permits), housing inventory, and U.S. Postal Service carrier route additions. Prior to use, FLO reviews these data and confirms proper assumptions and incorporation of local data sources, particularly with respect to any publicly available residential development data, making modifications as warranted.

The benefit of this approach is that the geographic analysis performed allows for a granular forecasting of how many of the eligible new children in the district over the next five years will enroll in district schools, which is expected to be more accurate than simply using district-level rates to predict capture. This is key, as migration often plays a larger role in future enrollment levels than any other factor (e.g., more influential than gradual changes in birthrate) but can vary greatly within a region.

At the end of each five-year window, the attendance-area numbers are modified as needed to ensure that they are consistent with districtwide numbers, which are computed using only districtwide population and historical enrollment numbers. In this way, the districtwide numbers control the attendance-area-level numbers.

Longer-term Forecasts (ten-year)

Our ten-year forecasts assume that U.S. Census-tract-level migration patterns, similar to those of the years between 2024–25 and 2029–30, were applied to the years between 2020–21 and 2024–25 as well as to quantities of buildable land within district boundaries and the relative rates at which those spaces are expected to be built out.

2019–20 births, which inform kindergarten classes beginning with the 2024–25 school year, were projected based on a review of historical live births to mothers residing in the district, the forecasted population of females of childbearing age throughout Pierce County, and county and state trends in fertility.

In terms of capture rate, the grade-specific rates computed from the 2019–20 enrollment assessments are used. Also, as with the shorter-term forecasts, a three-year average of GPRs is enforced at the district level.

Data Sources

FLO used the following data sources to inform our student enrollment forecasts:

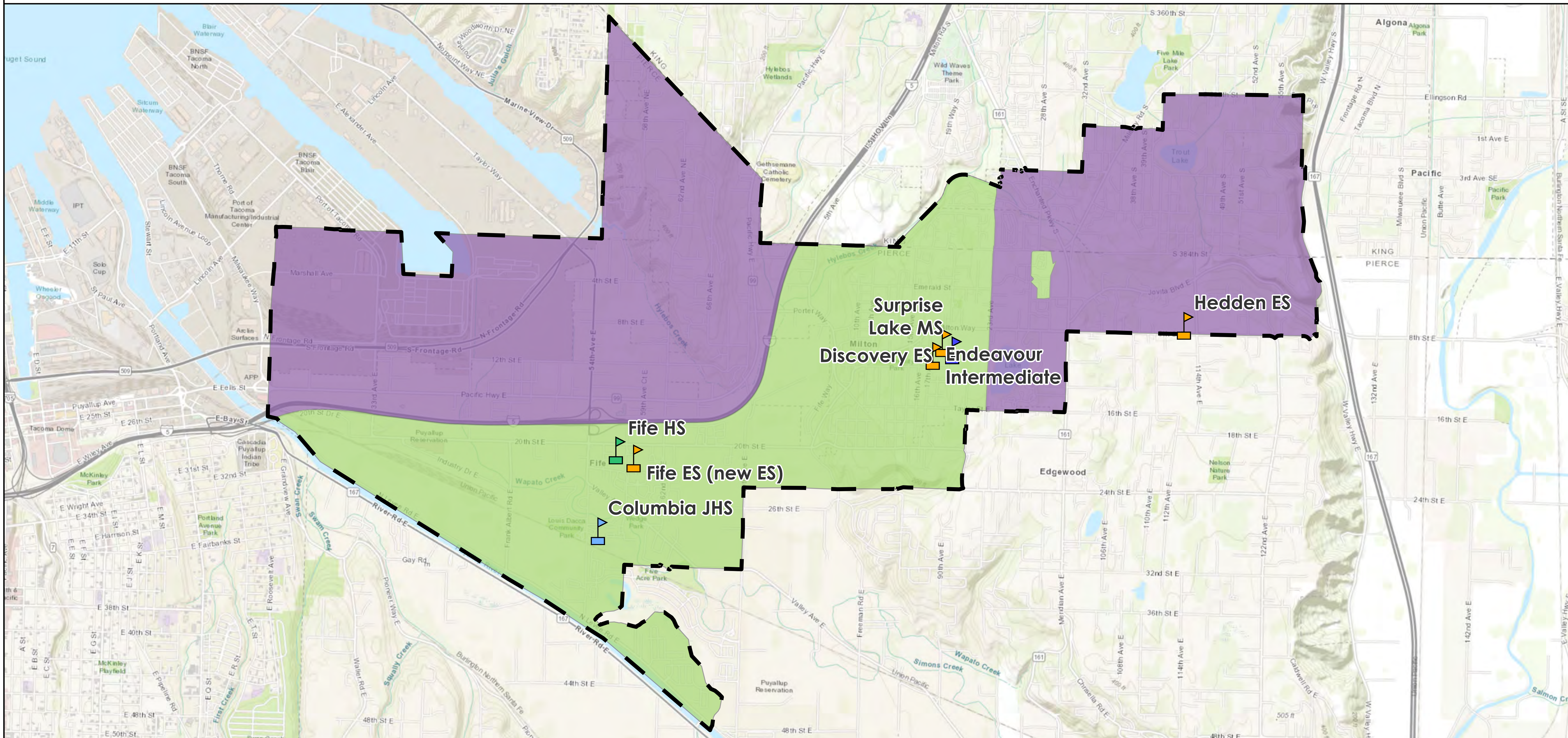
- District SIS (October 2019), attendance areas, district boundary, and school locations
- OSPI CEDARS
- WA DOH birth data

- Washington State Office of Financial Management forecasts
- U.S. Census 2010 and ACS 2014–2018 (5-year)
- Esri 2019/2024 U.S. Demographics
- FLO-conducted interview with planners from Pierce County
- County parcels, zoning, comprehensive plans, and building permits
- 2019 Statewide Urban Growth Areas and 2019 City Limits from Washington State Department of Ecology

Accuracy

Enrollment projections and forecasts are expected values based on assessment of current and past data and, as such, should be considered a planning tool, rather than steadfast numbers for the allocation of future resources. Unlike measurable data such as the results of a survey, projections and forecasts do not allow for the estimation of a confidence interval to measure accuracy. The best way to measure error is to compare actual enrollment with previously prepared projections or forecasts that were conducted using similar data and methodologies. Finally, when considering confidence and accuracy, the appropriate use of projections and forecasts includes an understanding that there is likely to be some degree of variation from the anticipated values. It is important that stakeholders "monitor and manage" the changing conditions that will affect future populations, and that projections or forecasts be updated either at a regular frequency or when deviation of actual enrollment from the projections or forecasts is significant and/or develops into a sustained trend.

District Overview



District Boundary
Endeavour Intermediate
Hedden ES

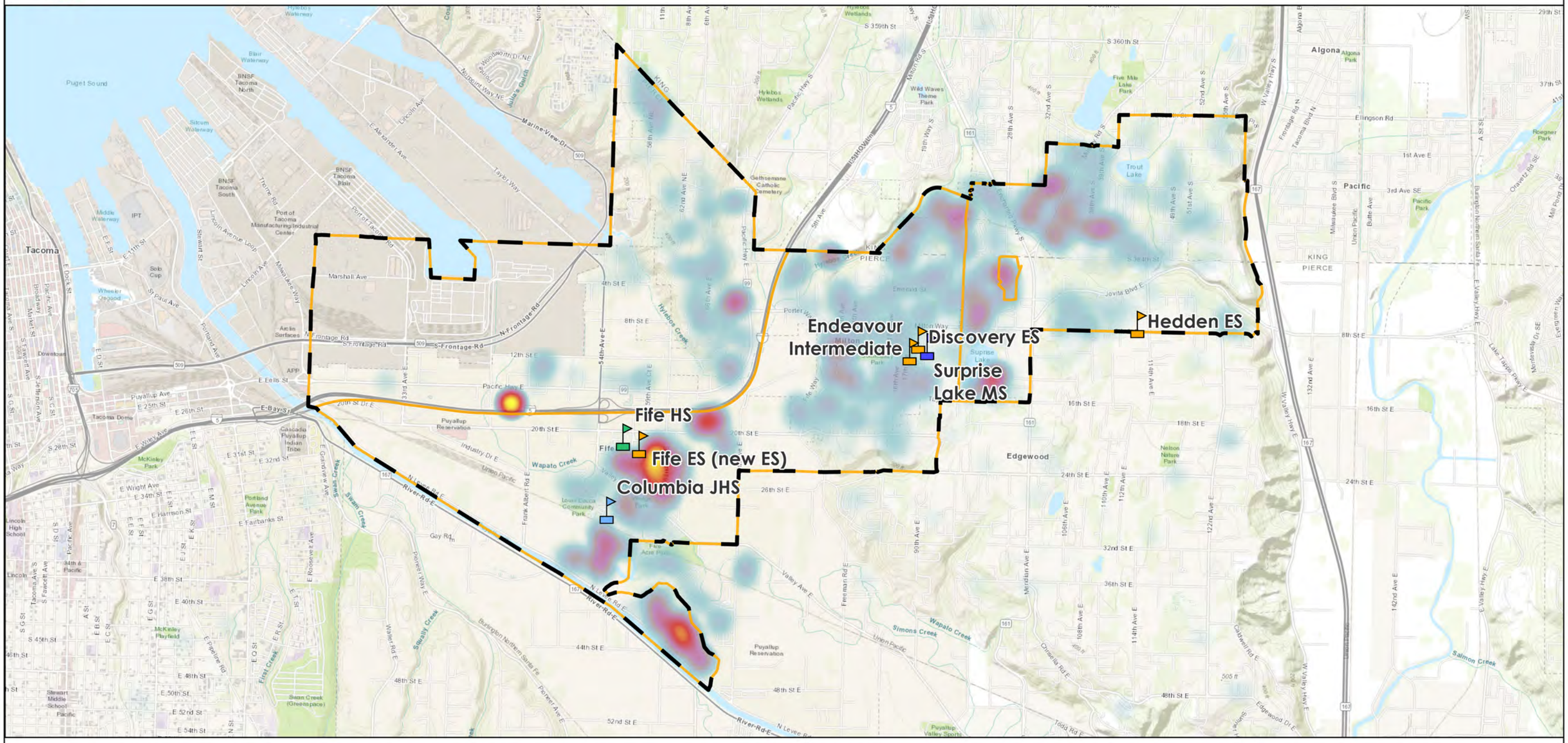
School Type
Elementary
Middle
Junior High
High

N
0 0.5 1 Miles

FLO Analytics

Figure 1

Student Density



FLO Analytics

N

0 0.5 1 Miles

Student Density

Sparse

Dense

District Boundary

Elementary School Attendance Area

School Type

Elementary

Middle

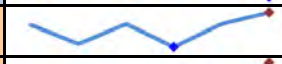
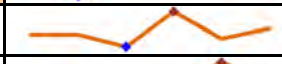
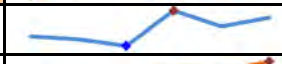
Junior High

High

Figure 2

Figure 3: Historical and Current Enrollment per Grade

District-wide Totals

Grade	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2014 to 2019	
K	301	250	277	295	266	293		-8
1	268	318	268	279	313	265		-3
2	293	275	294	272	294	305		12
3	271	289	277	302	273	308		37
4	253	275	287	294	297	289		36
5	272	260	289	285	285	294		22
6	292	292	280	315	288	298		6
7	272	294	275	284	312	292		20
8	269	283	306	289	276	318		49
9	310	267	284	305	281	292		-18
10	247	302	266	289	320	286		39
11	272	281	313	273	283	313		41
12	259	254	243	302	275	290		31
District Total	**3,579**	**3,640**	**3,659**	**3,784**	**3,763**	**3,843**		**264**

OSPI Report Card Enrollment 2014–15 to 2019–20 per grade. The lowest and highest enrollment values per grade are highlighted blue and orange, respectively. Sparklines are colored blue, gray, or orange to illustrate 5-year decline, stasis, or growth, respectively. Note that the summation of grade values to create a district-wide total may not exactly match the stated District Total; this is due to known discrepancies within the OSPI Report Card Enrollment dataset.

Figure 4: Historical and Current Enrollment per School

Fife School District Schools K-12

School Name	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2014 to 2019	
Discovery Primary School	573	570	553	578	581	561		-12
Endeavour Intermediate	575	557	580	582	598	645		70
Hedden ES	515	544	561	567	549	548		33
Surprise Lake MS	559	581	553	599	600	590		31
Columbia JrHS	579	551	591	594	557	610		31
Fife High School	778	837	822	864	878	869		91

OSPI Report Card Enrollment 2014–15 to 2019–20 per school and grade group. The lowest and highest enrollment values per school are highlighted blue and orange, respectively. Sparklines are colored blue, gray, or orange to illustrate 5-year decline, stasis, or growth, respectively. Abrupt changes in enrollment are most likely due to deliberate student placement or attendance boundary changes. Note that the summation of grade group subtotals to create a district-wide total may not exactly match the stated District Total; this is due to known discrepancies within the OSPI Report Card Enrollment dataset.

Figure 5: 2019–2020 District-wide Transfer Rates

GradeGroup	Enrollment In-District	Enrollment Out-of-District	Enrollment Total	Transfers Intra-district	Transfers Total	Transfer Rate Intra-district	Transfer Rate Out-of-District	Transfer Rate Total
K-5	1,603	151	1,754	92	243	5.7%	8.6%	13.9%
6-9 (MS/JHS)	1,071	131	1,202	0	131	0.0%	10.9%	10.9%
10-12	744	144	888	16	160	2.2%	16.2%	18.0%
District-wide	**3,418**	**426**	**3,844**	**108**	**534**	**3.2%**	**11.1%**	**13.9%**

All values based on the 10/01/2019 Student Information System.

Figure 6: 2019–2020 Elementary School Enrollment Patterns
Residence-Attendance Matrix

School of Attendance / Attendance Area	Residence Count	Discovery ES	Endeavour Intermediate	Hedden ES	Capture Rate	Transfer-Out Student Total	Transfer-Out Rate
Discovery ES	571	571	0	0	100.0%	0	0.0%
Endeavour Intermediate	646	2	576	68	89.2%	70	10.8%
Hedden ES	446	0	22	424	95.1%	22	4.9%
K-5 Subtotals	1,663	573	598	492	--	--	--
Out of District	153	50	47	56	--	--	--
K-5 Totals	1,816	623	645	548	--	--	--
Transfer-In Student Total	245	52	69	124	--	--	--
Transfer-In Rate	13.5%	8.3%	10.7%	22.6%	--	--	--

All values based on the 10/01/2019 Student Information System.

Residence counts are based on current attendance area boundaries, as of the 2019–20 school year.

Residence counts include Pre-Kindergarten students.

Figure 7: 2019–2020 Middle School and Junior High Enrollment Patterns
Residence-Attendance Matrix

School of Attendance / Attendance Area	Residence Count	Columbia JHS	Surprise Lake MS	Capture Rate	Transfer-Out Student Total	Transfer-Out Rate
Columbia JHS	546	546	0	100.0%	0	0.0%
Surprise Lake MS	525	0	525	100.0%	0	0.0%
6-9 Subtotals	1,071	546	525	--	--	--
Out of District	131	65	66	--	--	--
6-9 Totals	1,202	611	591	--	--	--
Transfer-In Student Total	131	65	66	--	--	--
Transfer-In Rate	11%	11%	11%	--	--	--

All values based on the 10/01/2019 Student Information System.

Residence counts are based on current attendance area boundaries, as of the 2019–20 school year.

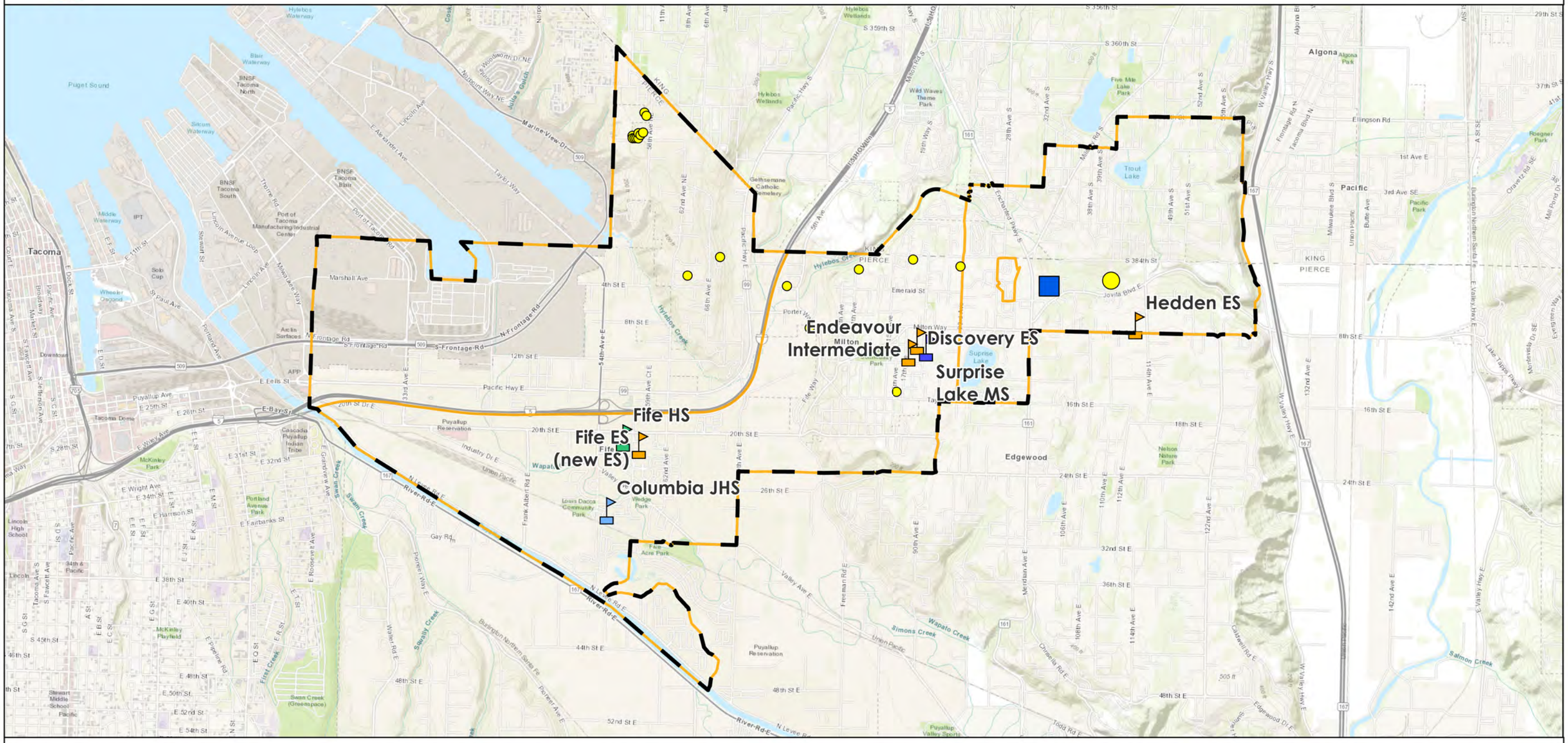
Figure 8: 2019–2020 High School Enrollment Patterns
Residence-Attendance Matrix

School of Attendance / Attendance Area	Residence Count	Fife HS	Fife Open Doors	Capture Rate	Transfer-Out Student Total	Transfer-Out Rate
Fife HS	744	728	16	97.8%	16	2.2%
10-12 Subtotals	744	728	16	97.8%	16	2.2%
Out of District	144	140	4	--	--	--
10-12 Totals	888	868	20	--	--	--
Transfer-In Student Total	160	140	20	--	--	--
Transfer-In Rate	18.0%	16.1%	100.0%	--	--	--

All values based on the 10/01/2019 Student Information System.

Residence counts are based on current attendance area boundaries, as of the 2019–20 school year.

Development Data



FLO Analytics

N

0 0.5 1 Miles

District Boundary

Elementary School Attendance Area

MF Units

37 units

SF Units

≤5 units

≤10 units

≤20 units

School Type

Elementary

Middle

Junior High

High

Figure 9

Figure 10: Student Generation Rates Used for New Housing Development

Summary of Generation Rates Used for New Development	K-12 Students per Single-Family (SF) Unit	K-12 Students per Multi-Family (MF) Unit
Overall Average Rates	***0.49***	***0.15***
Highest Rate Used for a Development	0.56	0.15
Lowest Rate Used for a Development	0.30	0.15

While overall average student generation rates used in preparing these forecasts were 0.49 K-12 students/SF unit, and 0.15 K-12 students/MF unit, the specific rates used for each development were carefully determined on an individual basis. Broadly speaking, we merge as much information as possible when choosing rates to apply to each development. Information considered includes 1) student generation data provided by the District 2) existing students/housing unit for SF and MF for individual neighborhoods (Census block groups); 3) development-specific expectations provided by planners (e.g., geared towards families vs. towards retirees); and 3) educated assumptions about trends specific to new housing development.

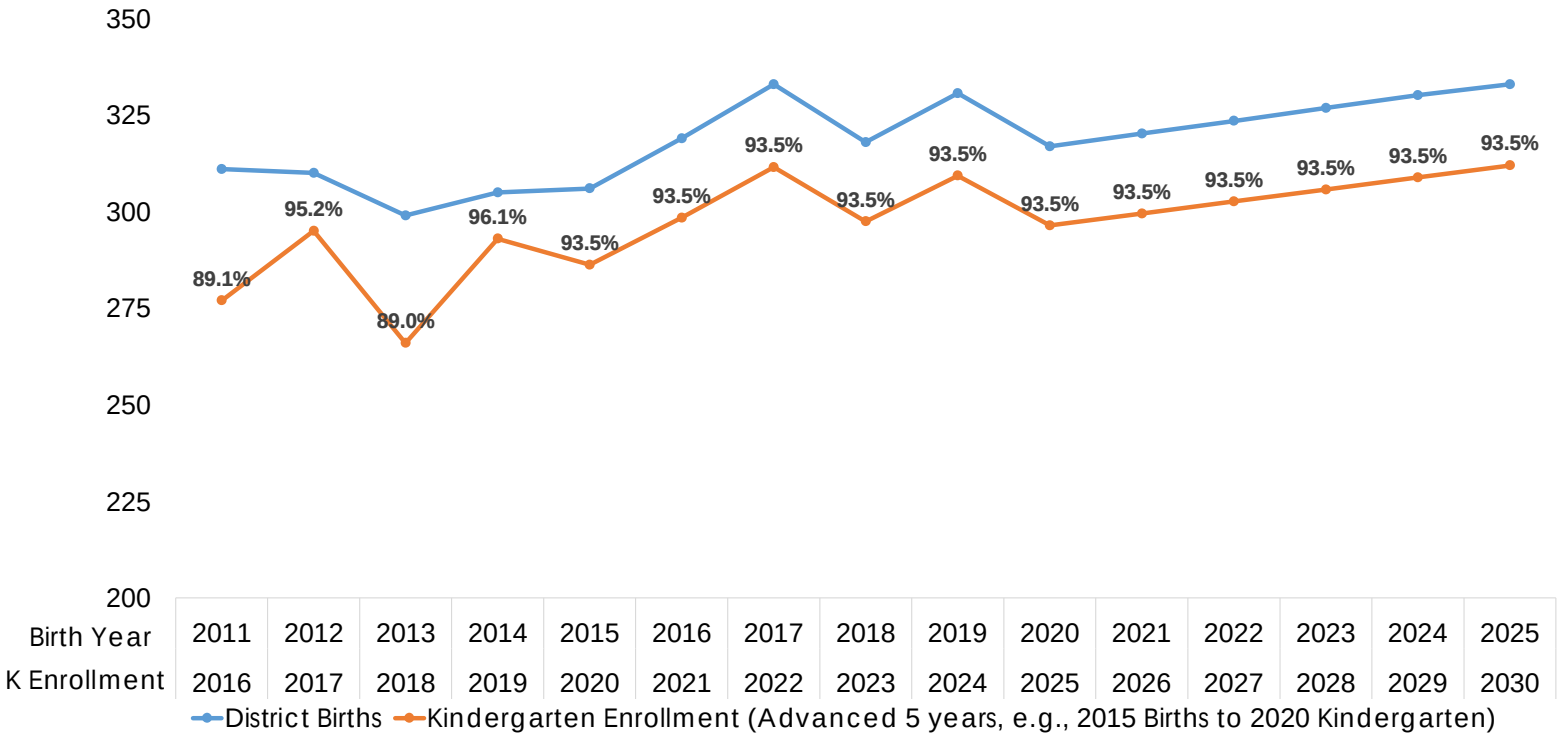
Figure 11: District Birth Rates

Forecasts →

Birth Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
District Births	311	310	299	305	306	319	333	318	331	317	320	323	327	330	333

Forecasts →

K Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
K Total	277	295	266	293	286	298	312	297	309	296	300	303	306	309	312
K % of Births	89.1%	95.2%	89.0%	96.1%	93.5%	93.5%	93.5%	93.5%	93.5%	93.5%	93.5%	93.5%	93.5%	93.5%	93.5%



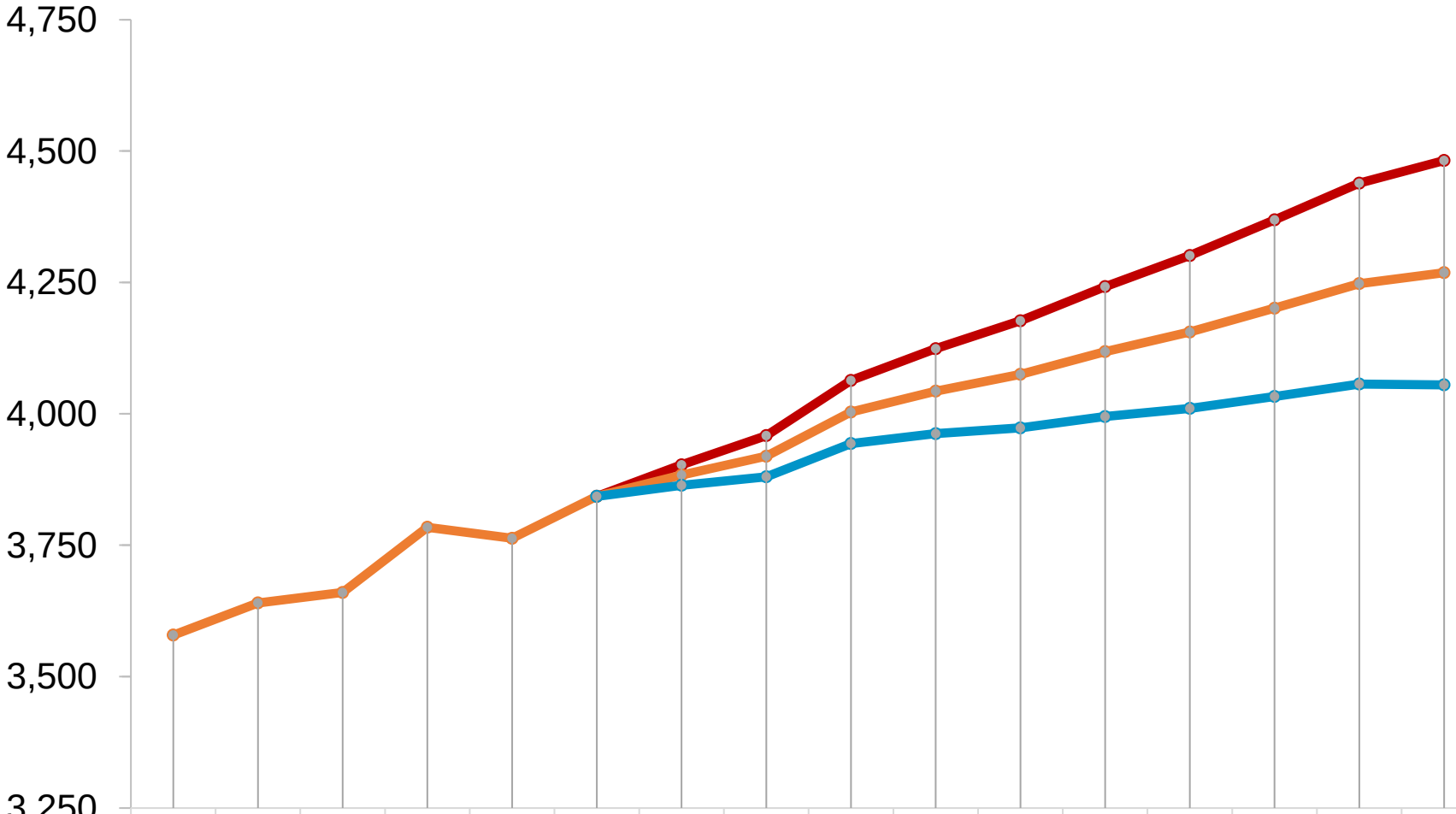
WA DOH 2010 to 2018 live births to mothers residing in the district and District K enrollment totals for the 2015–16 to 2019–20 school years. The metric "K % of Births" is calculated by dividing each K class by number of the live births five years prior (e.g., 2019 K class divided by 2014 births). 2019 to 2024 births, which inform K classes beginning with the 2024–25 school year, were projected based on an assessment of the historical birth data. Forecasts of future K class sizes were then prepared by employing forecasts of trends in "K % of Births" values. Note that birth numbers reported by WA DOH represent the January 1st through December 31st calendar year, and, therefore, do not align directly with K enrollment 5 years later (i.e., August cutoff for being age 5 to enroll in K in the fall).

Figure 12: Grade Progression Ratios

Grade Progression	2015-16	2016-17	2017-18	2018-19	2019-20	5-year Average
K-1	1.06	1.07	1.01	1.06	1.00	1.04
1-2	1.03	0.92	1.01	1.05	0.97	1.00
2-3	0.99	1.01	1.03	1.00	1.05	1.01
3-4	1.01	0.99	1.06	0.98	1.06	1.02
4-5	1.03	1.05	0.99	0.97	0.99	1.01
5-6	**1.07**	**1.08**	**1.09**	**1.01**	**1.05**	**1.06**
6-7	1.01	0.94	1.01	0.99	1.01	0.99
7-8	**1.04**	**1.04**	**1.05**	**0.97**	**1.02**	**1.02**
8-9	0.99	1.00	1.00	0.97	1.06	1.00
9-10	**0.97**	**1.00**	**1.02**	**1.05**	**1.02**	**1.01**
10-11	1.14	1.04	1.03	0.98	0.98	1.03
11-12	0.93	0.86	0.96	1.01	1.02	0.96

2015–16 to 2019–20 Grade Progression Ratios based on OSPI Report Card Enrollment. GPRs are calculated as the ratio of enrollment in a specific grade in a given year, to the enrollment of the same age cohort in the previous year. For instance, when 150 kindergarteners in 2017 become 140 first graders in 2018, a GPR of 0.93 is yielded. GPRs quantify how cohort sizes change as students progress to subsequent grades by considering that not all students advance to the next grade and new students join existing cohorts. A GPR value greater than 1.0 indicates that the student cohort increased in size from one grade to the next. Such a result may be due to students moving into the district or students choosing to transfer into the district from other districts (public or private). Conversely, a GPR value less than 1.0 indicates that the student cohort decreased in size from one grade to the next. This may be due to students moving out of the district, students choosing to transfer to other districts, or students not advancing to the next grade.

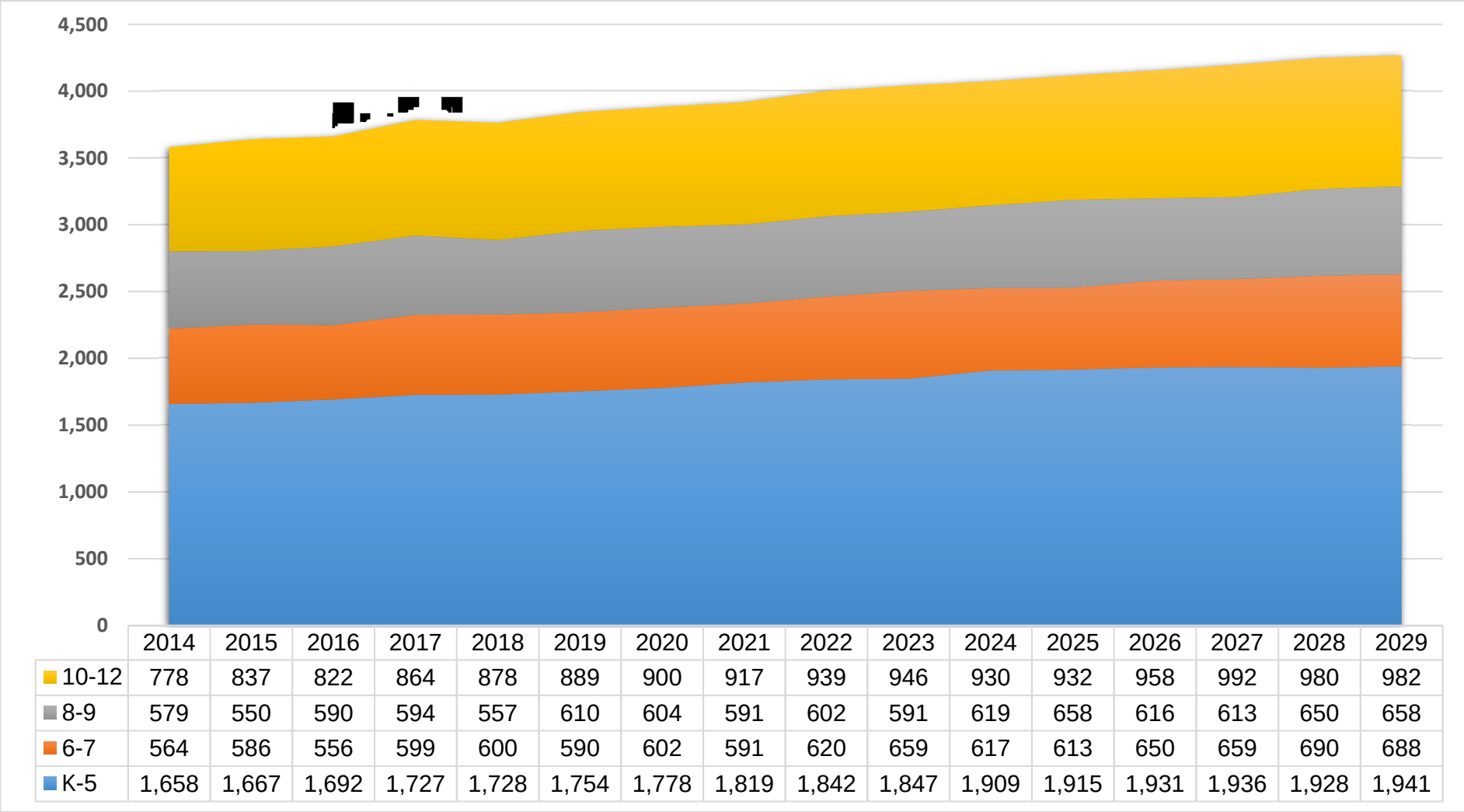
Figure 13: Total District-wide Building Attendance Enrollment Forecasts Low-, Medium- (Preferred), and High-Growth Series



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
High						3,843	3,903	3,958	4,063	4,124	4,177	4,242	4,301	4,369	4,439	4,482
Medium	3,579	3,640	3,660	3,784	3,763	3,843	3,883	3,919	4,003	4,043	4,075	4,118	4,156	4,201	4,248	4,268
Low						3,843	3,864	3,880	3,943	3,962	3,973	3,995	4,010	4,033	4,057	4,055

District-wide building attendance enrollment forecasts (fall membership headcount) through the 2029–30 school year—low, medium, and high-growth series. Enrollment values include all schools and students living both within and outside the District, except for preschool students.

Figure 14: District-wide Building Attendance Enrollment Forecasts by Grade Group Medium-Growth Series



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
10-12	778	837	822	864	878	889	900	917	939	946	930	932	958	992	980	982
8-9	579	550	590	594	557	610	604	591	602	591	619	658	616	613	650	658
6-7	564	586	556	599	600	590	602	591	620	659	617	613	650	659	690	688
K-5	1,658	1,667	1,692	1,727	1,728	1,754	1,778	1,819	1,842	1,847	1,909	1,915	1,931	1,936	1,928	1,941

District-wide building attendance enrollment forecasts (fall membership headcount) through the 2029–30 school year by grade group—medium-growth series. Enrollment values include all schools and students living both within and outside the District, except for preschool students.

Figure 15: District-wide Residence-Based Enrollment Forecasts by Grade

	Grade	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	K	272	267	279	293	278	290	277	281	284	287	290
	1	239	276	271	283	297	282	294	281	285	288	291
	2	282	242	279	274	287	301	285	298	284	288	291
	3	286	290	249	287	282	294	309	293	305	292	296
	4	264	295	299	257	296	291	304	319	302	315	301
	5	260	255	285	289	248	286	281	293	308	292	305
	6	270	265	260	291	295	253	292	287	299	314	298
	7	255	269	265	259	290	294	253	291	286	298	313
	8	282	257	271	267	261	292	296	254	293	287	300
	9	264	283	257	271	267	261	292	296	255	293	288
	10	240	269	287	262	276	272	266	297	301	259	298
	11	273	237	265	284	258	272	268	262	293	297	255
	12	231	248	216	241	258	235	247	244	238	266	270
Residing in District *(Residence-based)*	***K-5***	*1,603*	*1,625*	*1,662*	*1,683*	*1,688*	*1,745*	*1,750*	*1,765*	*1,769*	*1,762*	*1,774*
	6-7	*525*	*535*	*525*	*550*	*585*	*548*	*545*	*578*	*585*	*613*	*611*
	8-9	*546*	*539*	*528*	*538*	*528*	*553*	*588*	*551*	*548*	*581*	*588*
	10-12	*744*	*754*	*768*	*787*	*792*	*779*	*781*	*802*	*831*	*821*	*823*
	K-12	*3,418*	*3,453*	*3,484*	*3,558*	*3,594*	*3,625*	*3,664*	*3,695*	*3,733*	*3,777*	*3,796*

*Out of District Students and Total Attendance**

Out-of-District	***K-5***	*151*	*153*	*157*	*159*	*159*	*164*	*165*	*166*	*167*	*166*	*167*
	6-7	*66*	*67*	*66*	*69*	*74*	*69*	*68*	*73*	*74*	*77*	*77*
	8-9	*65*	*64*	*63*	*64*	*63*	*66*	*70*	*66*	*65*	*69*	*70*
	10-12	*144*	*146*	*149*	*152*	*153*	*151*	*151*	*155*	*161*	*159*	*159*
	K-12	*426*	*430*	*434*	*444*	*449*	*450*	*454*	*460*	*466*	*471*	*473*
Total Enrollment *(Building Attendance)*	***K-5***	*1,754*	*1,778*	*1,819*	*1,842*	*1,847*	*1,909*	*1,915*	*1,931*	*1,936*	*1,928*	*1,941*
	6-7	*591*	*602*	*591*	*620*	*659*	*617*	*613*	*650*	*659*	*690*	*688*
	8-9	*611*	*604*	*591*	*602*	*591*	*619*	*658*	*616*	*613*	*650*	*658*
	10-12	*888*	*900*	*917*	*939*	*946*	*930*	*932*	*958*	*992*	*980*	*982*
	K-12	*3,844*	*3,883*	*3,918*	*4,002*	*4,043*	*4,075*	*4,119*	*4,155*	*4,199*	*4,248*	*4,269*

District-wide residence-based enrollment forecasts through the 2029–30 school year by grade. Out-of-District students and total attendance information provided as additional insight into potential enrollment conditions in the district.* Out-of-District represents students living outside the district boundary who are enrolled in district schools. The 2019-20 enrollment values included above are based on the October SIS and differ slightly from the OSPI Report Card Enrollment values which appear elsewhere in this report.

Figure 16: District-wide Attendance-Based Enrollment Forecasts by Grade

	Grade	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	K	293	293	305	319	305	317	304	309	312	315	318
	1	265	301	297	309	324	309	321	308	313	315	319
	2	305	268	306	301	313	328	313	325	312	316	319
	3	308	315	275	313	308	322	336	321	333	319	324
	4	289	321	325	283	323	318	331	347	330	343	329
	5	294	281	311	316	275	314	308	321	336	320	332
	6	298	299	293	326	332	288	326	323	336	353	336
	7	292	303	298	294	327	329	287	328	323	337	352
	8	318	289	302	299	293	325	331	287	326	322	335
	9	292	315	289	303	299	294	327	329	287	328	323
	10	286	317	337	313	327	322	316	349	355	312	351
	11	313	285	315	334	309	322	318	313	346	350	308
	12	290	297	265	292	309	286	298	295	291	319	323
Building Attendance	***K-5***	*1,754*	*1,778*	*1,819*	*1,842*	*1,847*	*1,909*	*1,915*	*1,931*	*1,936*	*1,928*	*1,941*
	6-7	*590*	*602*	*591*	*620*	*659*	*617*	*613*	*650*	*659*	*690*	*688*
	8-9	*610*	*604*	*591*	*602*	*591*	*619*	*658*	*616*	*613*	*650*	*658*
	10-12	*889*	*900*	*917*	*939*	*946*	*930*	*932*	*958*	*992*	*980*	*982*
	K-12	*3,843*	*3,883*	*3,918*	*4,002*	*4,043*	*4,075*	*4,119*	*4,155*	*4,199*	*4,248*	*4,269*

District-wide attendance-based enrollment forecasts (fall membership headcount) through the 2029–30 school year by grade. Includes Out-of-District enrollment The 2019-20 enrollment values included above are based on the October SIS and may differ slightly from the OSPI Report Card Enrollment values which appear elsewhere in this report. Due to rounding, totals between this table and Figure 15 may not align, but will be within one student.

Figure 17: Residence-Based Enrollment Forecasts by Attendance Area

Attendance Area	Students Residing → 2019	2020	2021	2022	2023	2024	2029
Discovery ES	511	543	550	576	575	572	581
Endeavour Intermediate	646	628	647	645	641	677	684
Hedden ES	446	454	465	463	472	496	509
Columbia JHS	546	539	528	538	528	553	588
Surprise Lake MS	525	535	525	550	585	548	611
Fife HS	744	754	768	787	792	779	823
District	***3,418***	***3,453***	***3,484***	***3,558***	***3,594***	***3,625***	***3,796***

Note: 426 students residing out-of-district.

Figure 18: Building Attendance Enrollment Forecasts by School/Program

	Building Attendance →						
Building/Program	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2029**
Discovery ES	561	597	605	632	631	630	640
Endeavour Intermediate	645	631	648	645	645	678	686
Hedden ES	548	550	566	565	571	601	615
Columbia JHS	611	604	591	602	591	619	658
Surprise Lake MS	591	602	591	620	659	617	688
Fife HS	868	893	910	932	939	923	975
Fife Open Doors	20	10	10	10	10	10	10
K-12	***3,844***	***3,886***	***3,921***	***4,006***	***4,046***	***4,078***	***4,272***

Note: 426 elementary school students residing out-of-district.

Building attendance enrollment forecasts (fall membership headcount) through the 2029–30 school year per school/program. The 2019-20 building attendance values are based on the OSPI Report Card Enrollment. Out-of-District students are included in the building attendance values per school/program.

Figure 19: Grade Group Enrollment with Pre-K: 2020 to 2029

Grade	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
PK	67	67	69	70	70	71	72	72	73	73
K-5	1,778	1,819	1,842	1,847	1,909	1,915	1,931	1,936	1,928	1,941
6-7	602	591	620	659	617	613	650	659	690	688
8-9	604	591	602	591	619	658	616	613	650	658
10-12	900	917	939	946	930	932	958	992	980	982

District-wide building attendance enrollment forecasts (fall membership headcount) through the 2029–30 school year by grade group—medium-growth series. Estimated Pre-K enrollment included. Pre-K values were calculated using the three-year weighted ratio of historic Pre-K to total historical enrollment.