# Utah's School Age and College Age Population Boom

**Overview**
After a decade of flat to slow growth, the Utah school age population (5 through 17 years old) will increase substantially beginning in 2004 and continue for at least another ten years. This increase in the number of school age persons is an echo boom from Utah's last baby boom that peaked around 1980. This cohort will enter the college age group (18 through 24) beginning in about 2016. Even if the economy slows significantly below trend and fertility rates converge towards national rates, this school age population boom will occur because of the large number of young women who are entering childbearing years. Importantly, growth of the working age population (ages 18 to 65) is projected to increase such that the school age dependency ratio does not increase beyond recent historical experience.

Population analysts have for some time anticipated a significant increase in the school age population (5 through 17 years of age) of Utah beginning around 2004 and extending for at least a decade. At this point the question is not whether the boom will materialize, but rather, the exact timing, magnitude, and geographical distribution of the increases in the school age and college age (18 through 24 years old) populations within the state. This chapter is an exploration of these issues.[1]

The acceleration in the growth rate of the school age population, which follows a decade of flat-to-slow growth during the 1990s, is primarily attributable to an increase in the number of women in childbearing years. Utah's last baby boom peaked in the early 1980s and this generation is now coming of age. In addition, the economic growth of the 1990s created a demand for labor that attracted workers to the state and many of these migrants were young.[2] Consequently, the annual number of state births has set new records for each of the last five years, surpassing the number of births in the early 1980s. Importantly, the record level births, and the associated subsequent increases in the school age population, are not the result of a rising fertility rate, but rather the shear size of this cohort of young women.[3]

Predicted scenarios based on the effects of various fertility rate and economic growth assumptions are:

- The school age boom will occur even if fertility and economic growth rates decline.
- The school age dependency ratio (the number of school age persons per 100 working age persons) will rise and fall with the wave, but will not rise above recently experienced levels.

## State Level Analysis

The 30-year baseline projections discussed here are the official State of Utah projections produced by the Governor's Office of Planning and Budget (GOPB) using the Utah Process Economic and Demographic Projection (UPED) Model system. The various scenarios discussed here have been generated with the UPED model as well. State scenarios were constructed using combinations of economic growth and fertility assumptions. These were selected because of the strong influence they exert on the size and age composition of the population, particularly the school age population. Three economic growth paths (high, medium (baseline), and low) were combined with three fertility assumptions (high, medium (baseline), and low) to produce nine scenarios. The baseline scenario essentially assumes conservative long-term trend demographic and economic rates.

## State Level Results

**Total Population.** According to the baseline projections, the population of the state, which was estimated to be 2,246,553 on July 1, 2000, should reach 2,786,216 by 2010, and 3,760,058 by 2030. The high growth/high fertility scenario sets the upper limit (projected population of just over 4.13 million in 2030) while the low economic growth and low fertility scenario produces a projected population of 3,421,516 in 2030. The scenario ranges expand around the baseline, both absolutely and in percentage terms, further into the future.

**School Age Population.** The statewide school age population boom begins in 2004 for all scenarios. In the baseline case, the projected number of persons aged 5 through 17 increases to 515,339 in 2004 from 507,778 in 2003. From 2006 through 2018, this age group is projected to increase by over 10,000 per year, with annual increments peaking in 2012, with an increase of over 20,000. The boom occurs in all scenarios -- only the magnitude differs. For example, in the high economic growth/high fertility case, the school age population reaches 700,000 in the year 2014, while the baseline case does not reach this level until 2015, and the low growth/low fertility reaches it by 2018. Importantly, in all scenarios the school age population boom mostly runs its course by 2020 as the children of Utah's 1980s baby boom move out of the school age group.

**College Age Population.** The projected college age population (18 through 24 years old) is also affected by the early 1980s baby boom cohort, and eventually by their children. People in this age group inevitably migrate to and from the state for a variety of reasons including religious missions, college attendance, and employment. However, the fundamental dynamic determining the size of this population is this internally generated demographic wave. In the short term, the college age population is projected to decline as the peak of the 1980s Utah baby boom ages beyond these years. The children of this cohort enter the college age group roughly 12 years after the start of the school age population boom. All scenarios project a rapid increase in the college age group from about 2016 to 2025, with increases extending through the end of the projection period (2030). Because college and university attendance are not restricted to this "traditional" age group, this presents only a partial measurement of the projected demand for higher education in Utah.

**Per Worker Burden.** The number of employed workers is primarily determined by the size and growth rate of the economy, rather than

[1] This topic is explored in greater detail in T. Ross Reeve and Pam Perlich, "The Coming Boom in Utah's School Age and College Age Populations: State and County Scenarios." Utah Economic and Business Review. Volume 62. Numbers 9 and 10. September/October 2002.

[2] Migration rates for employment purposes are highest among people in their early to mid-twenties.

[3] See Pamela S. Perlich, "Demographic Trends Affecting Public Education in Utah." Utah Economic and Business Review. Volume 60. Numbers 11 and 12. November/December 2000.

[4] Again, because college and university attendance extends beyond the age of 24, this is a partial measure.

purely demographic factors. When economic growth results in the demand for labor exceeding the pool of internally generated workers, employment related net in-migration to the state occurs. Conversely, if economic growth does not create adequate employment for the internally generated labor force, net out-migration of the labor force results. If we compare the relatively steady baseline trend projection of employed workers with the numbers of projected school age and college age persons, we can derive a proxy measure of economic burden to each working taxpayer. The school age population per employed worker increases as the school age population boom progresses and then diminishes as that cohort ages. It peaks in 2018 at 0.495 school age persons per employed worker, then declines to 0.46 by 2030. The number of college age persons per employed worker declines in the short run as the cohort born in the early 1980s ages beyond college age to a low of 0.224 in 2017. Then, as the children of this cohort (those being born in our current record-level births) enter the college age, the ratio again rises, particularly from 2018 to 2025.[4] The combined effect is a decline in the projected number of 5 through 24-year-old persons per employed worker from 0.81 in 2000 to 0.71 in 2011, and an increase to 0.729 in 2024.

**School Age Population Dependency Ratio.** The school age dependency ratio, which is the number of school age persons per 100 working age (18 through 64 years old) persons, is a standard measure of age structure. Utah has for many years had the highest school age dependency ratio among all states. Projected growth in the working age population nearly keeps pace with that of the school age population during the projected boom years. In fact, the cumulative growth of the school age population from 2000 to 2020 (with 2020 marking the end of the boom) is projected to be about 240,000 or a 47% increase while the increase in the working age population is projected to be about 626,000 or 47%. Consequently, the baseline projected dependency ratio is projected to actually fall until 2006 then increase until 2019 when it again reaches the 2000 level.

## County Level Results

Statewide, the school age population (5 through 17 years old) is projected (baseline) to increase by 264,894 or 51.7% from 2000 to 2030. Nearly 60% (58.8%) of the increase is projected to occur in Salt Lake and Utah counties. In the baseline case, the school age population in Salt Lake County is projected to increase by 86,705 persons (44.5% increase) and the school age population in Utah County is projected to increase by 69,130 persons (80.5% increase) from 2000 to 2030. The projected increase for Washington County is 26,208, more than double the increase (130 % ) from 2000 to 2030. Other counties with large projected increases are Weber (24,067 or 55.4% increase), Davis (18,210 or 29.9% increase), Cache (11,026 or 56.1% increase), Tooele (9,814 or 98.4 % increase), Iron (5,700 or 76.5% increase), and Summit (4,578 or 67.2% increase) counties. Counties in the Uintah Basin, southeastern, and central portions of the state are either somewhat affected by the boom, or not at all affected. The counties with economies based on natural resources have historically been quite difficult to project because natural resource cycles most often cannot be anticipated. Even in those counties projected to have little growth or actual declines in the school age population, there are often demographic waves from this statewide population event (Duchesne, Emery, Millard, San Juan, and Uintah). Some counties are projected to have school age population decline from 2000 to 2010 before the trend reverses (Box Elder, Carbon, Duchesne, Garfield, Morgan, Sanpete, and Sevier). There are also counties in which the school age population is projected to stay constant or actually decline after a run-up from the school age boom (Box Elder, Cache, Carbon, Duchesne, Emery, Grand, Iron, Millard, Rich, San Juan, Sanpete, Sevier, and Uintah counties).

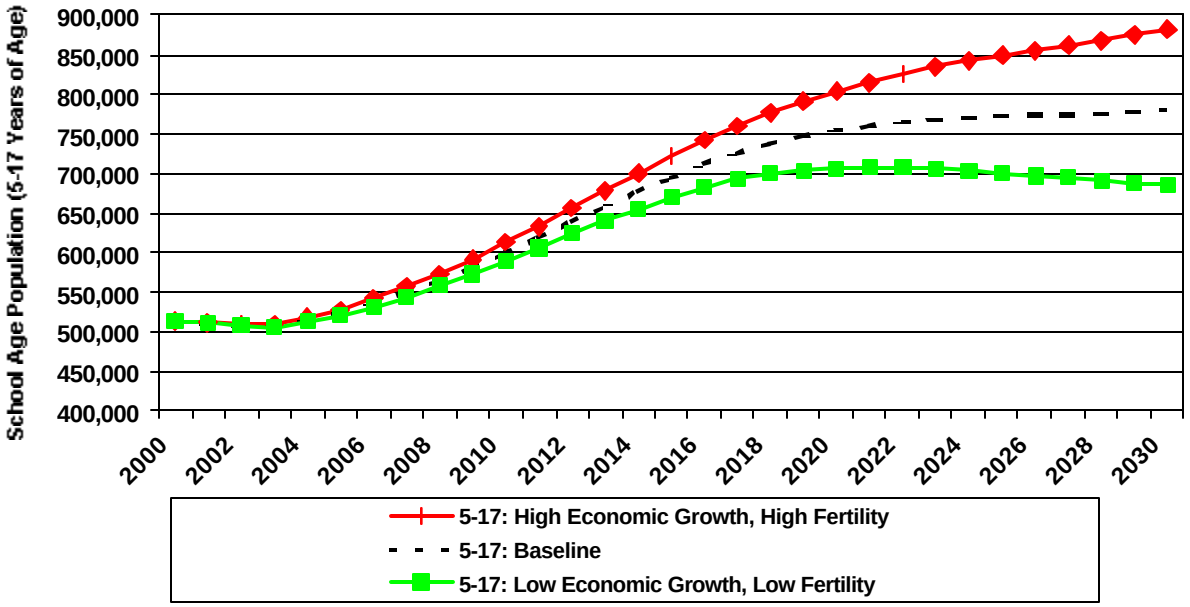
## Conclusion

The statewide school age population (5-17 age group) is projected to increase significantly, particularly from 2004 to 2020. The growth is an "echo boom" of Utah's last baby boom, which peaked in the early 1980s. Utah's “1980s baby boomers” are coming of age and beginning to have children. Their children will begin to reach school age in 2004, and college age (ages 18-24) from around 2016 through 2025. The school age population boom is anticipated to occur for a variety of reasonable assumptions for economic growth, fertility, and migration. However, the timing and magnitude of the boom will vary with the alternate scenarios that will emerge as a consequence of changes in any of these assumptions. In all scenarios, the school age population boom mostly runs its course by 2020, when the children of Utah's 1980s baby boom move out of the school age group. The number of school age persons per employed worker is projected to decrease in the short term, increase until 2018, and then eventually decline for the duration of the projection period (2030).

The demographic wave impacts the 18-24 age group, especially from 2016 to 2025, with slower but continued growth thereafter. This is a subset of the adult population attending college or universities. The number of college persons (18-24 age group) per employed worker is projected to decrease until 2017, and then begin to rise for the duration of the projection period (2030).

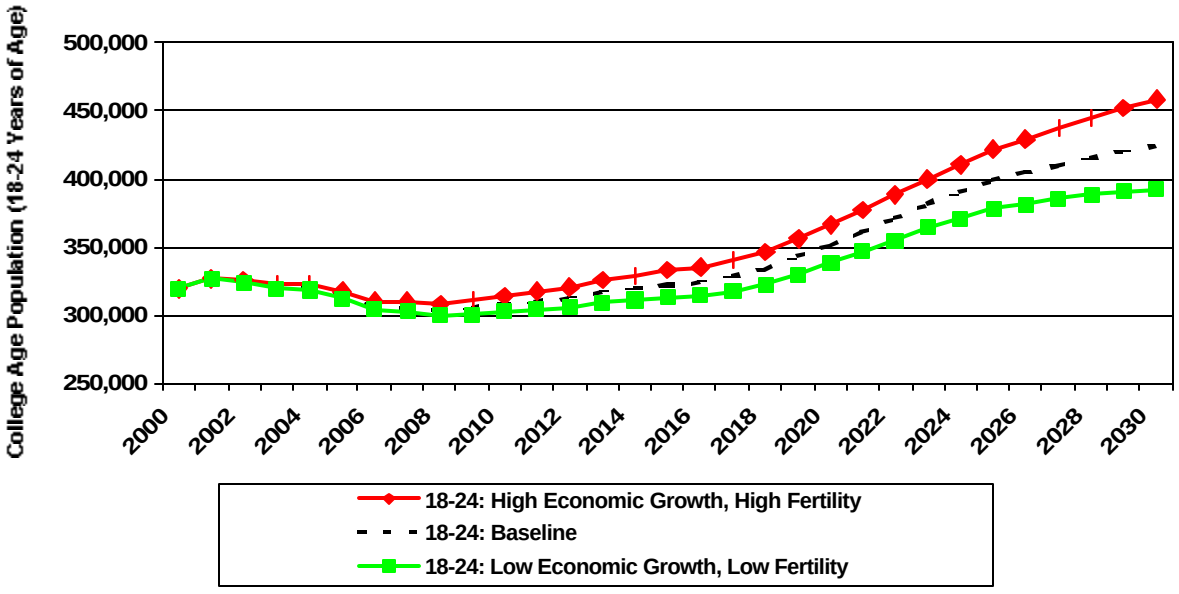
Salt Lake and Utah counties are projected to have nearly 60% of the increased school age population from 2000 to 2030. Washington County is projected to have the third largest increase in school age population, as well as the highest projected percentage increase (130% increase from 2000 to 2030). Other highly impacted counties in absolute numbers include Weber, Davis, Cache, Tooele, Iron, Summit, Wasatch, and Box Elder counties. Impacted counties in percentage increase include Kane, Wayne, and Juab counties. This research validates the anticipated statewide school age population boom and indicates the possible timing, magnitude, and location of impacts. The projected educational burdens per working taxpayer, although rising and falling with the demographic waves, are not outside recent historical experience.

**Figure 73**
**State of Utah: Projected School Age Population Scenarios**



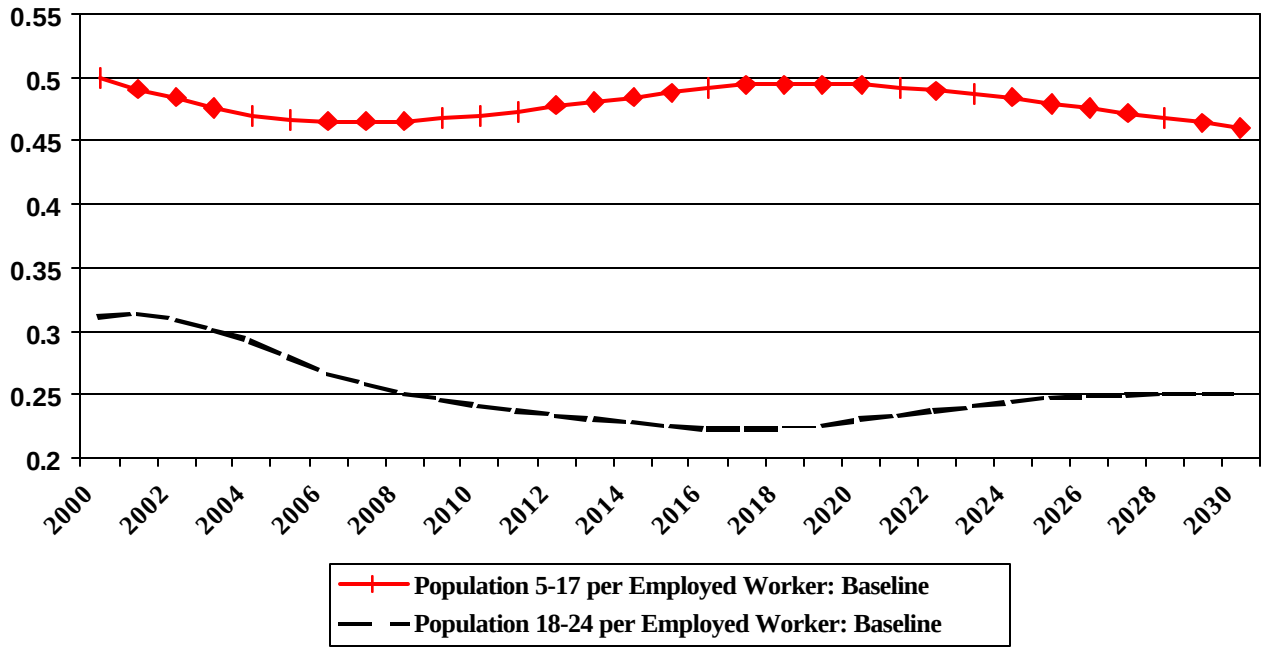

Source: UPED Model System, BEBR calculations

**Figure 74**
**State of Utah: College Age Population Scenarios**



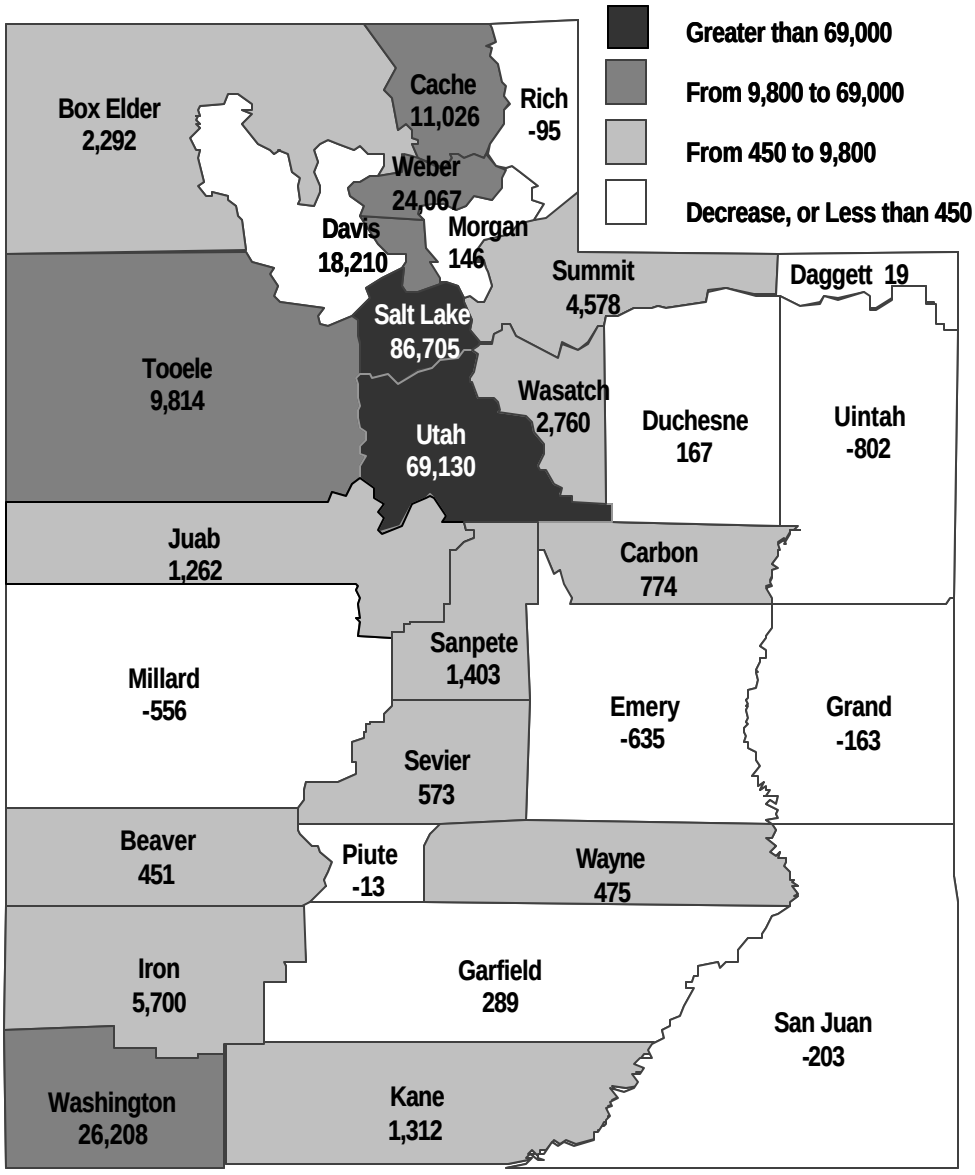

Source: UPED Model System, BEBR calculations

**Figure 75**
**State of Utah: Projected School Age (5-17) Population and College Age (18-24) Population per Employed Worker**




Source: UPED Model System, BEBR calculations

**Figure 76**
**Projected Cumulative School Age Population Increase: 2000 to 2030**




Source: BEBR Analysis of UPED Model System data

**Table 89**
**State of Utah Projections: Baseline and Scenarios**

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | Cumulative Increase (2000-2020) Amount | Percent | Cumulative Increase 2000-2030 Amount | Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Population | | | | | | | | | | | | | | | |
| Hgh Economic Growth, Hgh Fertility | 2,246,553 | 2,295,962 | 2,322,928 | 2,360,857 | 2,423,059 | 2,481,881 | 2,848,747 | 3,250,165 | 3,566,442 | 3,846,158 | 4,130,408 | 1,319,889 | 59 | 1,883,855 | 84 |
| Baseline | 2,246,553 | 2,295,962 | 2,318,120 | 2,350,832 | 2,407,421 | 2,460,078 | 2,786,216 | 3,129,214 | 3,371,388 | 3,586,790 | 3,760,058 | 1,124,835 | 50 | 1,513,505 | 67 |
| Low Economic Growth, Low Fertility | 2,246,553 | 2,295,962 | 2,313,309 | 2,340,766 | 2,340,766 | 2,438,345 | 2,724,783 | 3,012,169 | 3,184,134 | 3,304,131 | 3,421,516 | 937,581 | 42 | 1,174,963 | 52 |
| State School Age Population (Ages 5-17) | | | | | | | | | | | | | | | |
| Hgh Economic Growth, Hgh Fertility | 512,372 | 510,966 | 508,394 | 509,614 | 518,123 | 528,064 | 612,252 | 721,799 | 802,879 | 848,608 | 881,953 | 290,507 | 57 | 369,581 | 72 |
| Baseline | 512,372 | 510,966 | 507,490 | 507,778 | 515,339 | 524,267 | 600,612 | 695,304 | 753,950 | 773,291 | 779,971 | 241,578 | 47 | 267,599 | 52 |
| Low Economic Growth, Low Fertility | 512,372 | 510,966 | 506,584 | 505,927 | 512,545 | 520,467 | 589,111 | 669,477 | 705,998 | 700,725 | 685,793 | 193,626 | 38 | 173,421 | 34 |
| College Age Population (Ages18-24) | | | | | | | | | | | | | | | |
| Hgh Economic Growth, Hgh Fertility | 319,333 | 326,584 | 325,563 | 323,422 | 322,852 | 317,892 | 314,441 | 332,833 | 366,156 | 421,460 | 458,434 | 46,823 | 15 | 139,101 | 44 |
| Baseline | 319,333 | 326,584 | 324,623 | 321,677 | 320,581 | 315,129 | 308,754 | 322,986 | 352,091 | 399,525 | 424,798 | 32,758 | 10 | 105,465 | 33 |
| Low Economic Growth, Low Fertility | 319,333 | 326,584 | 323,683 | 319,882 | 318,275 | 312,358 | 303,186 | 313,490 | 338,366 | 377,944 | 392,527 | 19,033 | 6 | 73,194 | 23 |
| Working Age Population (Ages 18-64) | | | | | | | | | | | | | | | |
| Hgh Economic Growth, Hgh Fertility | 1,332,186 | 1,371,206 | 1,391,794 | 1,417,381 | 1,458,005 | 1,493,818 | 1,706,904 | 1,913,772 | 2,062,972 | 2,201,593 | 2,349,594 | 730,786 | 55 | 1,017,408 | 76 |
| Baseline | 1,332,186 | 1,371,206 | 1,388,605 | 1,410,856 | 1,447,967 | 1,480,035 | 1,669,820 | 1,845,506 | 1,957,917 | 2,055,566 | 2,159,265 | 625,731 | 47 | 827,079 | 62 |
| Low Economic Growth, Low Fertility | 1,332,186 | 1,371,206 | 1,385,415 | 1,404,316 | 1,437,941 | 1,466,320 | 1,633,406 | 1,779,404 | 1,857,169 | 1,917,909 | 1,983,589 | 524,983 | 39 | 651,403 | 49 |
| School Age Dependency Ratio (1) | | | | | | | | | | | | | | | |
| Hgh Economic Growth, Hgh Fertility | 38.5 | 37.3 | 36.5 | 36.0 | 35.5 | 35.3 | 35.9 | 37.7 | 38.9 | 38.5 | 37.5 | | | | |
| Baseline | 38.5 | 37.3 | 36.5 | 36.0 | 35.6 | 35.4 | 36.0 | 37.7 | 38.5 | 37.6 | 36.1 | | | | |
| Low Economic Growth, Low Fertility | 38.5 | 37.3 | 36.6 | 36.0 | 35.6 | 35.5 | 36.1 | 37.6 | 38.0 | 36.5 | 34.6 | | | | |

Notes: All populations are July 1. Because of computational procedures, there is a slight difference with the official 2002 state baseline.
(1) The school age dependency ratio is the number of school age persons per 100 working age persons.

Source: UPED Model System

**Figure 90**
**School Age Population Change: 2000 to 2030**
**Baseline Projections**

| County (In order of ranking) | Amount Change | Percent Change | Share of State Increase (Percent) |
|---|---|---|---|
| Salt Lake | 86,705 | 44.5 | 32.7 |
| Utah | 69,130 | 80.5 | 26.1 |
| Washington | 26,208 | 130.2 | 9.9 |
| Weber | 24,067 | 55.4 | 9.1 |
| Davis | 18,210 | 29.9 | 6.9 |
| Cache | 11,026 | 56.1 | 4.2 |
| Tooele | 9,814 | 98.4 | 3.7 |
| Iron | 5,700 | 76.5 | 2.2 |
| Summit | 4,578 | 67.2 | 1.7 |
| Wasatch | 2,760 | 71.5 | 1.0 |
| Box Elder | 2,292 | 19.9 | 0.9 |
| Sanpete | 1,403 | 24.7 | 0.5 |
| Kane | 1,312 | 95.3 | 0.5 |
| Juab | 1,262 | 55.4 | 0.5 |
| Carbon | 774 | 17.6 | 0.3 |
| Sevier | 573 | 11.8 | 0.2 |
| Wayne | 475 | 80.1 | 0.2 |
| Beaver | 451 | 31.0 | 0.2 |
| Garfield | 289 | 25.2 | 0.1 |
| Duchesne | 167 | 4.2 | 0.1 |
| Morgan | 146 | 7.0 | 0.1 |
| Daggett | 19 | 12.3 | 0.0 |
| Piute | -13 | -4.0 | N/A |
| Rich | -95 | -17.8 | N/A |
| Grand | -163 | -9.6 | N/A |
| San Juan | -203 | -4.8 | N/A |
| Millard | -556 | -15.3 | N/A |
| Emery | -635 | -21.6 | N/A |
| Uintah | -802 | -12.1 | N/A |
| State of Utah | 264,894 | 51.7 | 100.0% |

Source: UPED Model System, BEBR calculations