Appendix 4: Huntsville Population Projection

Population Outlook for Huntsville (Pre-Census 2020 Release)

Population projections are an important component of a long-range planning process. They help determine and quantify the demands that will be placed on public facilities and services based on the potential pace and scale of the community's physical growth. Projections reflect local, regional, national and international trends and offer a basis to prepare for the future. However, forecasting population changes can be challenging, particularly for the long term, because it is often difficult to account for all circumstances that may arise. Therefore, it will be important for the City to monitor population and economic growth continually to account for both short- and longer-term shifts that can influence development activity and trends in the community and larger region. ==The projections below were completed in early 2021, prior to Census 2020 estimates being released. An updated projection, with preliminary 2020 Census figures, is included beginning on page 3.==

Alternative Growth Scenarios

Demographers caution that population projections become trickier as the geographic area gets smaller, making city-level population the most difficult to forecast. This is because local population change is strongly influenced by less predictable factors such as housing prices and options, availability of vacant land to develop, results from economic development efforts, potential future annexation of additional territory, and other factors.

Given this context, the chart in this section provides a comparison of several potential scenarios for future population change in Huntsville. The projections build on the latest U.S. Census estimate of 42,241 for 2019 and identify potential population levels in five-year increments out to 2040.

Varying Quantities and Rates of Growth

Linear growth forecasts are "straight line" projections that result in the same absolute number of new persons being added to the population in each period. This produces a declining rate of growth over time as the same amount is being added to an ever-expanding base (in the case of Huntsville, adding 4,103 residents per decade). Exponential growth projections produce higher numbers than linear by assuming a constant <u>rate</u> of growth over time. This is similar to the power of compound growth in a savings account over time; the interest (i.e., growth) rate may not change, but it is being applied to an ever-expanding balance, resulting in larger and larger interest earnings over time. In the case of Huntsville, the Exponential Growth scenario results in 1,435 more residents by 2040 than the Linear Growth scenario.

The Exponential Growth line, labeled as "Steady Growth Rate" in the Huntsville scenarios chart, is based on the 1.02 percent compound annual growth rate (CAGR) the city had from 2010 to 2019. The Exponential Growth line leads to a 2040 population of 52,293 while the Linear Growth line, labeled as "Steady Numeric Growth" on the chart, leads to a 2040 population of 50,858.

County Step-Down

This method considers the trend in city share of the countywide population in past decades and prospects for its future share. It also draws upon population estimates and projections produced for all counties statewide by the Texas Demographic Center. The City of Huntsville's share of Walker County's population was 57.3 percent in 1980, when the city had 23,936 residents relative to 41,789 in the entire county

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(including the city). By 2010, Huntsville's share had decreased slightly to 56.8 percent of 67,861 persons county-wide and then increased slightly to 57.9 percent in 2019.

The County Step-Down line shows where the City of Huntsville's population would be through 2040 (54,094) if it continues the trend of accounting for a slightly increased share of the county's population (59.9 percent by 2040, up from the current 57.9 percent in 2019).

Accelerated Growth Rate

This projection is a variation on the Exponential Growth scenario. It examines what would happen if growth in Huntsville proceeds at a faster rate than in the past. An accelerated growth rate may be the result of various "game changing" factors. This could include residential subdivision activity and volume construction of new homes continuing to progress northward from the Houston/Woodlands/Conroe metropolitan area past Willis and New Waverly toward Huntsville. Another factor could be faster than expected student growth, especially on campus, at Sam Houston State University. This scenario applies
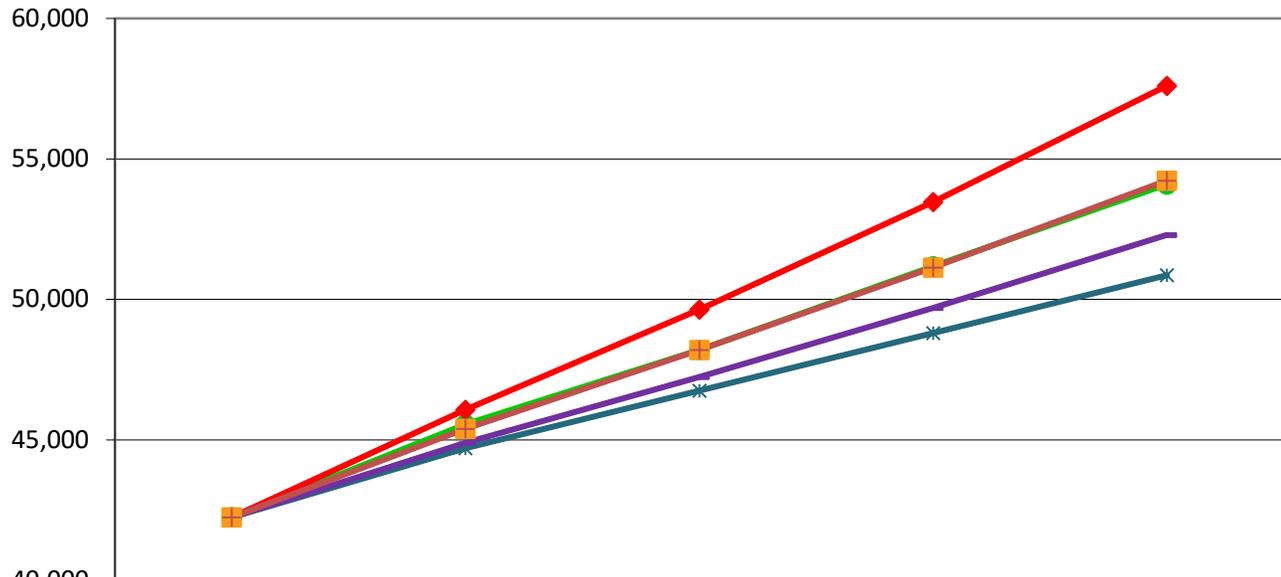
	2019	2025	2030	2035	2040
County Step Down	42,241	45,553	48,198	51,180	54,094
Steady Numeric Growth (4,103 per decade)	42,241	44,702	46,755	48,806	50,858
Steady Growth Rate (1.02%)	42,241	44,894	47,238	49,697	52,293
Accelerated Growth	42,241	46,074	49,635	53,471	57,603
Midpoint	42,241	45,388	48,195	51,138	54,231

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an accelerating growth rate in phases, with a 1.25 CAGR during the 2020s decade, and a 1.5 percent CAGR during the 2030s to 2040. This is in comparison to the fixed 1.02 CAGR applied through all decades in the original Exponential Growth scenario. This results in population growth to 57,603 by 2040 relative to the 52,293 outcome under the original Exponential Growth scenario.

Bottom Line

It is wise for cities to think in terms of a range of potential growth rather than an absolute number given the uncertainty of any small-area forecast that extends beyond a few years. **It is assumed for this Comprehensive Plan that Huntsville's 2040 population will fall within a forecast range of 50,858 to 57,603 persons, which yields a midpoint of 54,231**.

As illustrated by the Midpoint projection line in the scenarios chart, the midpoint of a potential growth range to assume for this Comprehensive Plan – between the lower Steady Numeric Growth (Linear) projection and the higher Accelerated Growth projection – would put Huntsville's population at **45,388 in 2025; 48,195 in 2030; and 54,231 in 2040**. This would mean an **additional 11,990 residents from 2019** and implies that Huntsville could add the equivalent of 28.4 percent of its current population by 2040.

The newest U.S. Census Bureau estimates for 2019 showed an average household size in the City of Huntsville of 2.49 persons for owner-occupied housing and 2.19 for renter-occupied housing. The 2019 data also showed 30.9 percent owner-occupied and 69.1 percent renter-occupied housing within the city. Combining these factors yields a weighted average household size of 2.25 persons for the City of Huntsville. Applying this weighted average household size means that **5,329 additional housing units would be needed by 2040 to accommodate 11,990 added residents**.

Census 2020 Update

On August 12, 2021, *preliminary* Census 2020 population numbers were released by the U.S. Census Bureau. The preliminary population numbers indicate an estimated 2020 population of Huntsville of 45,941. This represents faster growth than experienced in Huntsville in previous decades. The population projections have been updated to reflect these preliminary Census figures. When the finalized Census 2020 population numbers are released for Huntsville, they should be compared against the numbers utilized in this analysis and updated as needed. This can be accomplished through an update to the Comprehensive Plan. It will be important for the City to continue to monitor population and economic growth to account for both short- and longer-term shifts that can influence development activity and trends in the community and larger region.

Alternative Growth Scenarios

The chart in this section provides a comparison of several potential scenarios for future population change in Huntsville. The projections build on the preliminary U.S. Census estimate of 45,941 for 2020 and identify potential population levels in five-year increments out to 2040.

Varying Quantities and Rates of Growth

Linear growth forecasts are "straight line" projections that result in the same absolute number of new persons being added to the population in each period. This produces a declining rate of growth over time as the same amount is being added to an ever-expanding base (in the case of Huntsville, adding **7,393 residents per decade**). Exponential growth projections produce higher numbers than linear by assuming

a constant <u>rate</u> of growth over time. This is similar to the power of compound growth in a savings account over time; the interest (i.e., growth) rate may not change, but it is being applied to an ever-expanding balance, resulting in larger and larger interest earnings over time. In the case of Huntsville, the Exponential Growth scenario results in 4,526 more residents by 2040 than the Linear Growth scenario.

The Exponential Growth line, labeled as "Steady Growth Rate" in the Huntsville scenarios chart, is based on the **1.7** percent compound annual growth rate (CAGR) the city had from 2010 to 2020. The Exponential Growth line leads to a 2040 population of 65,253 while the Linear Growth line, labeled as "Steady Numeric Growth" on the chart, leads to a 2040 population of 60,727.

County Step-Down

This method considers the trend in city share of the countywide population in past decades and prospects for its future share. It also draws upon population estimates and projections produced for all counties statewide by the Texas Demographic Center. Note that as of August 19, 2021 the Texas Demographic Center had not yet updated any population projections based on the August 12, 2021 Census 2020 data release. The County Step-Down projection may increase if re-run following any updates to County level projections by the Texas Demographic Center. The City of Huntsville's share of Walker County's population was 57.3 percent in 1980, when the city had 23,936 residents relative to 41,789 in the entire county (including the city). By 2010, Huntsville's share had decreased slightly to 56.8 percent of 67,861 persons county-wide and then increased to 60.1 percent in 2020.

The County Step-Down line shows where the City of Huntsville's population would be through 2040 (56,729) if it continues the trend of accounting for a slightly increased share of the county's population (62.8 percent by 2040, up from the current 60.1 percent in 2020).

Accelerated Growth Rate

This projection is a variation on the Exponential Growth scenario. It examines what would happen if growth in Huntsville proceeds at a faster rate than in the past. An accelerated growth rate may be the result of various "game changing" factors. This could include residential subdivision activity and volume construction of new homes continuing to progress northward from the Houston/Woodlands/Conroe metropolitan area past Willis and New Waverly toward Huntsville. Another factor could be faster than expected student growth, especially on campus, at Sam Houston State University.

Based on the growth rate experienced between 2010 and 2020 (1.7 percent CAGR), this scenario applies an accelerating growth rate of 2.0 percent CAGR. This results in population growth to 68,266 by 2040 relative to the 65,253 outcome under the Exponential Growth scenario.

Bottom Line

It is wise for cities to think in terms of a range of potential growth rather than an absolute number given the uncertainty of any small-area forecast that extends beyond a few years. **It is assumed based on preliminary Census 2020 numbers that Huntsville's 2040 population will fall within a forecast range of 60,727 to 68,266 persons, which yields a midpoint of 64,496**.

As illustrated by the Midpoint projection line in the scenarios chart, the midpoint of a potential growth range – between the lower Steady Numeric Growth (Linear) projection and the higher Accelerated Growth projection – would put Huntsville's population at **50,180 in 2025; 54,668 in 2030; and 64,496 in 2040**. This

would mean an **additional 18,555 residents from 2020** and implies that Huntsville could add the equivalent of 40.3 percent of its current population by 2040.

Applying the weighted average household size means that **8,246 additional housing units would be needed by 2040 to accommodate 18,555 added residents**.

Preliminary Census 2020 Updated Population Projection Chart

	2020	2025	2030	2035	2040
County Step Down	45,941	47,189	49,954	53,421	56,729
Steady Numeric Growth (7,393 per decade)	45,941	49,638	53,334	57,031	60,727
Steady Growth Rate (1.7%)	45,941	50,346	54,752	60,002	65,253
Accelerated Growth	45,941	50,723	56,002	61,831	68,266
Midpoint	45,941	50,180	54,668	59,431	64,496

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