# Technical Memorandum 

# Projections of Florida Population by County, 2020-2070 

Prepared for<br>Forecasting and Trends Office<br>FDOT Central Office<br>FDOT)

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## Introduction

The Multi-use Corridors of Regional Economic Significance (M-CORES) program is created by the Florida Department of Transportation (FDOT) to revitalize rural communities, encourage job creation and provide regional connectivity along the following three corridors:

- The Suncoast Connector, extending from Citrus County to Jefferson County
- The Northern Turnpike Connector, extending from the northern terminus of Florida's Turnpike northwest to the Suncoast Parkway
- The Southwest-Central Florida Connector, extending from Collier County to Polk County

One of the main objectives of the M-CORES program is to evaluate the future demand along the corridors and properly address the need for the corridors and their potential economic and environmental impacts. In order to support the objective, future population projections for the next 50 years from 2020 to 2070 in five-year increment were developed for all 67 counties in Florida. This Technical Memorandum describes the methodology used for the development of population projections and presents the results based on the methodology.

The Bureau of Economic and Business Research (BEBR) at the University of Florida has been making population projections for Florida and its counties since the 1970s. The latest report was published in April 2019 and it contains the most recent set of projections from 2020 to 2045 . To account for uncertainty regarding future population growth, BEBR publishes three series of projections: low, medium, and high. The medium series is typically considered more accurate, while the low and high series provide an indication of the uncertainty surrounding the medium series. It should be noted that these projections include only permanent residents, and tourists or seasonal residents are not included.

The methodology used by the BEBR to develop 2020-2045 population projections has been used for many years and has proven to be both practical and reliable. In consultation with the FDOT Forecasting and Trends Office (FTO), it was determined that for the purpose of the M-CORES program, the medium series of BEBR projections for 2020 to 2045 would be used for years up to to 2045. For years after 2045, i.e., from 2050 to 2070, the BEBR methodology used to generate 2020-2045 population projections in the medium range was deployed. However, to ensure the BEBR methodology was properly applied, a twostep process was followed. The first step involved in replicating the BEBR 2020-2045 population projections with the same methodology and data sources. The second step involved in extending the population projections to the next 20 years from 2050 to 2070 with necessary adjustments and reasonableness checks. The following sections provide more details about the two-step process.

## BEBR Methodology and Replicating 2020-2045 Population Projections

## State projections

Based on BEBR's methodology, the starting point for the state-level projections was the April 1, 2010 census population count by age, sex, race, and Hispanic origin, as adjusted by the National Center for Health Statistics (NCHS) in the Vintage 2014 bridged race population estimates. Projections were made in one-year intervals using a cohort-component methodology in which births, deaths, and migration are projected separately for each age-sex cohort in Florida for non-Hispanic whites, non-Hispanic nonwhites, and Hispanics.

Three different sets of assumptions are applied to provide low, medium, and high series of projections, although the low and high series do not provide absolute bounds on future population change, they provide a reasonable range in which Florida's future population is likely to fall. The medium projections of total population for 2019-2023 were adjusted to be consistent with the state population forecasts for those years produced by the State of Florida's Demographic Estimating Conference (DEC) held February 6,2019 . None of the projections after 2023 had any further adjustments.

BEBR recommended that medium series is the most likely to provide accurate forecasts in most circumstances. Therefore, the medium projections of state total population for 2020-2045 were directly used when replicating projections of county population for 2020-2045.

## County projections

The cohort-component method is a good way to make population projections at the state level but is not necessarily the best way to make projections at the county level. Many counties in Florida are so small that the number of persons in each age-sex category is inadequate for making reliable cohort-component projections, giving the lack of detailed small-area data. Even with more importation, county growth patterns are so volatile that a single technique based on data from single time period may produce misleading results. As a result, BEBR recommended use of several different techniques and historical base periods to project the total population at the county level.

BEBR started with the population estimate constructed for April 1, 2018, and made projections for each county using the following five different techniques:

- Linear - the population will change by the same number of persons in each future year as the average annual change during the base period.
- Exponential - the population will change at the same percentage rate in each future year as the average annual rate during the base period.
- Share-of-growth - each county's share of state population growth in the future will be the same as its share during the base period.
- Shift-share - each county's share of the state population will change by the same annual amount in the future as the average annual change during the base period.
- Constant-share - each county's share of the state population will remain constant at its 2018 level.

For the linear and share-of-growth techniques BEBR used base periods of two, ten, and twenty years (2016-2018, 2008-2018, and 1998-2018), yielding three sets of projections for each technique. For the
exponential and shift-share techniques, BEBR used base periods of five and fifteen years (2013-2018 and 2003-2018), yielding two sets of projections for each technique. The constant-share method was based on data for a single year (2018). Table 1 shows a summary of the techniques used, the corresponding base period(s), and the number of population projection sets created based on the techniques.

Table 1 Population Projection Techniques and Base Periods

| Technique | Base Period | Number of Projection Set |
| :---: | :---: | :---: |
| Linear | 2016-2018 (two-year period) <br> 2008-2018 (ten-year period) <br> 1998-2018 (twenty-year period) | 3 |
| Exponential | 2013-2018 (five-year period period) <br> 2003-2018 (fifteen-year period) | 2 |
| Share-of-growth | 2016-2018 (two-year period) <br> 2008-2018 (ten-year period) <br> 1998-2018 (twenty-year) | 3 |
| Shift-share | 2013-2018 (five-year period) 2003-2018 (fifteen-year period) | 2 |
| Constant share | 2018 (one-year period) | 1 |

BEBR's methodology produced eleven projections for each county for each projection year (2020, 2025, 2030, 2035, 2040 and 2045). From these, five averages were calculated: one using all eleven projections (AVE - 11), one that excluded the highest and lowest projections (AVE - 9), one that excluded the two highest and two lowest projections (AVE - 7), one that excluded the three highest and three lowest projections (AVE -5), and one that excluded the four highest and four lowest projections (AVE - 3).

BEBR selected AVE-5 for 65 counties, the average in which the three highest and three lowest projections were excluded. For Monroe County, an average of projections, made with the exponential technique with a base period of five years and the linear technique with a base period of ten years, was selected. And for Putnam County, AVE-3 was selected.

In addition, BEBR made manual adjustments to the projections in seven counties in the Florida Panhandle to account for estimated population losses or slowdowns in growth due to the impacts of Hurricane Michael (Bay, Calhoun, Franklin, Gulf, Jackson, Liberty, and Wakulla counties). Besides, some other manual adjustments were made in several counties to account for changes in institutional populations such as university students and prison inmates.

The county population projections for 2020-2045 were generated using the BEBR methods described above. However, since no information about the BEBR manual adjustments was available, no manual adjustments were made to the initial projections.

Table 2 presents population projections without manual adjustments for all counties for 2020-2045. Table 3 shows the percent differences between BEBR's projections and unadjusted projections based on the BEBR methodology. In most cases, the differences between the two sets are below 3.0\%, which indicates that direct application of the BEBR methodology were able to replicate the original BEBR population projections reasonably well, and the BEBR methodology can be extended to develop future projections from 2050 to 2070 that are consistent with the 2020-2045 projections.

# Table 2 Projections of Florida Population by County, 2020-2045 

|  | Population Projections (without Manual Adjustments) |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| County | $\mathbf{2 0 2 0}$ | $\mathbf{2 0 2 5}$ | $\mathbf{2 0 3 0}$ | $\mathbf{2 0 3 5}$ | $\mathbf{2 0 4 0}$ | $\mathbf{2 0 4 5}$ |
| Alachua | 269,500 | 283,500 | 295,000 | 305,700 | 316,200 | 326,300 |
| Baker | 28,300 | 29,700 | 30,900 | 32,000 | 32,900 | 33,900 |
| Bay | 185,800 | 196,200 | 204,700 | 212,000 | 219,400 | 226,400 |
| Bradford | 28,400 | 28,900 | 29,200 | 29,300 | 29,500 | 29,600 |
| Brevard | 597,600 | 629,300 | 654,600 | 677,200 | 697,100 | 718,500 |
| Broward | $1,940,300$ | $2,034,600$ | $2,118,200$ | $2,188,700$ | $2,250,400$ | $2,307,500$ |
| Calhoun | 15,400 | 16,000 | 16,500 | 17,000 | 17,500 | 18,000 |
| Charlotte | 183,100 | 195,700 | 205,900 | 214,400 | 222,200 | 229,700 |
| Citrus | 148,500 | 154,600 | 160,300 | 165,700 | 170,700 | 175,600 |
| Clay | 220,200 | 239,000 | 256,900 | 273,100 | 288,100 | 302,400 |
| Collier | 381,500 | 416,100 | 447,700 | 475,400 | 501,400 | 527,500 |
| Columbia | 71,100 | 74,100 | 76,800 | 79,400 | 81,800 | 83,900 |
| DeSoto | 36,000 | 36,800 | 37,600 | 38,300 | 39,000 | 39,700 |
| Dixie | 16,800 | 17,300 | 17,700 | 18,100 | 18,400 | 18,600 |
| Duval | 980,200 | $1,043,100$ | $1,094,900$ | $1,138,100$ | $1,182,300$ | $1,226,300$ |
| Escambia | 323,900 | 335,900 | 347,200 | 356,200 | 363,900 | 370,600 |
| Flagler | 112,500 | 124,200 | 135,100 | 145,400 | 155,400 | 165,200 |
| Franklin | 12,200 | 12,700 | 13,000 | 13,400 | 13,700 | 14,000 |
| Gadsden | 48,400 | 49,000 | 49,400 | 49,700 | 49,800 | 49,800 |
| Gilchrist | 17,800 | 18,600 | 19,300 | 20,000 | 20,600 | 21,200 |
| Glades | 13,200 | 13,600 | 13,900 | 14,200 | 14,500 | 14,700 |
| Gulf | 16,700 | 17,000 | 17,200 | 17,400 | 17,600 | 17,700 |
| Hamilton | 14,700 | 14,800 | 14,800 | 14,700 | 14,800 | 14,800 |
| Hardee | 27,300 | 27,200 | 27,000 | 26,600 | 26,400 | 26,200 |
| Hendry | 40,200 | 41,500 | 42,600 | 43,400 | 44,100 | 45,000 |
| Hernando | 191,600 | 205,300 | 218,600 | 231,100 | 242,600 | 253,800 |
| Highlands | 104,200 | 107,400 | 110,200 | 112,800 | 115,200 | 117,500 |
| Hillsborough | $1,462,300$ | $1,588,700$ | $1,705,700$ | $1,812,100$ | $1,906,900$ | $1,999,800$ |
| Holmes | 20,300 | 20,500 | 20,700 | 20,900 | 21,100 | 21,300 |
| Indian River | 156,900 | 168,600 | 178,800 | 188,100 | 197,200 | 205,400 |
| Jackson | 50,700 | 51,400 | 51,700 | 52,000 | 52,200 | 52,500 |
| Jefferson | 14,900 | 15,200 | 15,500 | 15,700 | 15,800 | 16,000 |
| Lafayette | 8,600 | 8,700 | 8,800 | 8,900 | 8,900 | 9,000 |
| Lake | 359,300 | 398,800 | 434,700 | 469,600 | 503,600 | 535,100 |
| Lee | 747,000 | 825,200 | 897,100 | 963,100 | $1,025,400$ | $1,085,200$ |
| Leon | 298,000 | 311,200 | 323,100 | 334,500 | 344,300 | 353,600 |
|  |  |  |  |  |  |  |


| County | Population Projections (without Manual Adjustments) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 |
| Levy | 41,700 | 42,900 | 44,000 | 44,900 | 45,800 | 46,600 |
| Liberty | 9,100 | 9,600 | 10,100 | 10,500 | 10,800 | 11,200 |
| Madison | 19,600 | 19,700 | 19,900 | 20,000 | 20,100 | 20,300 |
| Manatee | 393,900 | 431,100 | 463,700 | 494,400 | 523,000 | 551,400 |
| Marion | 363,600 | 385,800 | 407,000 | 426,900 | 445,000 | 462,500 |
| Martin | 159,200 | 166,900 | 173,900 | 180,200 | 186,800 | 193,000 |
| Miami-Dade | 2,857,700 | 3,036,500 | 3,189,400 | 3,327,400 | 3,464,400 | 3,588,700 |
| Monroe | 76,000 | 77,500 | 79,000 | 80,500 | 82,000 | 83,600 |
| Nassau | 86,000 | 94,100 | 101,600 | 108,500 | 115,200 | 121,800 |
| Okaloosa | 202,200 | 211,500 | 219,900 | 227,600 | 234,900 | 241,700 |
| Okeechobee | 41,700 | 42,800 | 43,600 | 44,300 | 45,000 | 45,700 |
| Orange | 1,408,000 | 1,555,800 | 1,691,000 | 1,814,600 | 1,925,100 | 2,033,400 |
| Osceola | 377,200 | 440,400 | 499,900 | 556,200 | 606,700 | 658,100 |
| Palm Beach | 1,472,400 | 1,559,600 | 1,637,800 | 1,703,100 | 1,766,500 | 1,828,600 |
| Pasco | 533,700 | 578,600 | 622,500 | 662,400 | 698,500 | 732,800 |
| Pinellas | 982,800 | 1,011,600 | 1,035,200 | 1,054,200 | 1,069,700 | 1,082,800 |
| Polk | 697,700 | 755,400 | 807,400 | 856,700 | 900,600 | 941,800 |
| Putnam | 73,100 | 73,000 | 72,900 | 72,900 | 72,800 | 72,800 |
| St. Johns | 254,400 | 294,600 | 330,900 | 363,600 | 395,600 | 427,100 |
| St. Lucie | 313,000 | 337,900 | 360,900 | 382,300 | 402,700 | 422,600 |
| Santa Rosa | 182,100 | 199,600 | 215,600 | 230,200 | 243,700 | 256,400 |
| Sarasota | 429,800 | 459,700 | 484,300 | 504,900 | 522,700 | 540,400 |
| Seminole | 476,700 | 507,700 | 532,900 | 555,000 | 575,100 | 594,500 |
| Sumter | 133,900 | 155,400 | 177,000 | 196,200 | 214,500 | 232,200 |
| Suwannee | 46,100 | 48,600 | 50,800 | 52,800 | 54,600 | 56,200 |
| Taylor | 22,400 | 22,700 | 22,800 | 22,800 | 22,800 | 22,800 |
| Union | 16,100 | 16,600 | 17,000 | 17,400 | 17,700 | 18,000 |
| Volusia | 543,100 | 570,000 | 591,800 | 610,500 | 627,200 | 642,300 |
| Wakulla | 32,800 | 34,700 | 36,500 | 38,000 | 39,500 | 40,800 |
| Walton | 71,200 | 80,300 | 88,700 | 96,500 | 104,000 | 111,600 |
| Washington | 25,500 | 26,300 | 27,000 | 27,500 | 28,000 | 28,400 |

## Table 3 Percent Errors of Florida Population by County, 2020-2045

| County | Percent Errors <br> (between BEBR's Projections and Unadjusted Projections) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 |
| Alachua | 0.4\% | 1.5\% | 2.2\% | 3.1\% | 4.2\% | 5.3\% |
| Baker | 0.0\% | 0.7\% | 1.0\% | 1.9\% | 2.2\% | 3.4\% |
| Bay | 1.0\% | 3.5\% | 3.3\% | 3.1\% | 3.6\% | 4.4\% |
| Bradford | 0.7\% | 0.3\% | 1.0\% | 1.0\% | 1.4\% | 1.4\% |
| Brevard | 0.2\% | 0.2\% | 0.3\% | 0.2\% | 0.2\% | 0.2\% |
| Broward | 0.1\% | 0.3\% | 0.1\% | 0.3\% | 0.5\% | 0.7\% |
| Calhoun | 1.9\% | 3.2\% | 3.8\% | 4.3\% | 4.8\% | 5.9\% |
| Charlotte | 0.3\% | 0.2\% | 0.1\% | 0.1\% | 0.0\% | 0.3\% |
| Citrus | 0.1\% | 0.5\% | 0.5\% | 0.3\% | 0.3\% | 1.1\% |
| Clay | 0.0\% | 0.0\% | 0.5\% | 1.3\% | 2.3\% | 3.3\% |
| Collier | 0.3\% | 0.5\% | 0.4\% | 0.0\% | 0.9\% | 2.2\% |
| Columbia | 0.1\% | 0.3\% | 0.4\% | 1.0\% | 1.9\% | 2.6\% |
| DeSoto | 0.0\% | 0.3\% | 0.3\% | 0.3\% | 0.0\% | 0.5\% |
| Dixie | 1.2\% | 3.0\% | 4.7\% | 6.5\% | 7.6\% | 8.1\% |
| Duval | 0.2\% | 0.2\% | 0.0\% | 0.1\% | 0.4\% | 1.2\% |
| Escambia | 0.2\% | 0.4\% | 0.1\% | 0.2\% | 0.5\% | 0.8\% |
| Flagler | 0.0\% | 0.2\% | 0.5\% | 1.3\% | 2.5\% | 3.9\% |
| Franklin | 0.8\% | 0.0\% | 0.8\% | 0.7\% | 0.7\% | 0.0\% |
| Gadsden | 0.6\% | 1.2\% | 1.9\% | 2.3\% | 2.3\% | 2.0\% |
| Gilchrist | 0.0\% | 0.5\% | 0.5\% | 0.0\% | 0.0\% | 0.5\% |
| Glades | 0.0\% | 0.0\% | 0.0\% | 0.7\% | 1.4\% | 1.4\% |
| Gulf | 1.8\% | 0.6\% | 0.6\% | 1.7\% | 2.8\% | 3.8\% |
| Hamilton | 1.3\% | 2.6\% | 3.3\% | 4.5\% | 4.5\% | 5.1\% |
| Hardee | 0.0\% | 0.4\% | 1.5\% | 2.9\% | 3.6\% | 4.4\% |
| Hendry | 0.2\% | 1.0\% | 1.4\% | 2.3\% | 3.1\% | 3.2\% |
| Hernando | 0.1\% | 0.2\% | 0.1\% | 0.8\% | 1.8\% | 2.8\% |
| Highlands | 0.1\% | 0.1\% | 0.1\% | 0.1\% | 0.5\% | 1.0\% |
| Hillsborough | 0.3\% | 0.6\% | 0.2\% | 0.7\% | 1.5\% | 2.5\% |
| Holmes | 0.0\% | 0.5\% | 1.0\% | 0.5\% | 0.5\% | 0.5\% |
| Indian River | 0.2\% | 0.4\% | 0.3\% | 0.2\% | 1.3\% | 2.2\% |
| Jackson | 1.0\% | 1.4\% | 1.0\% | 1.0\% | 0.8\% | 0.8\% |
| Jefferson | 0.0\% | 0.0\% | 0.6\% | 1.3\% | 1.3\% | 1.3\% |
| Lafayette | 1.1\% | 2.2\% | 4.3\% | 5.3\% | 6.3\% | 6.3\% |
| Lake | 0.4\% | 0.8\% | 0.6\% | 0.5\% | 2.0\% | 3.5\% |
| Lee | 0.1\% | 0.1\% | 0.6\% | 1.4\% | 2.6\% | 3.8\% |
| Leon | 0.1\% | 0.2\% | 0.1\% | 0.9\% | 1.5\% | 2.2\% |
| Levy | 0.2\% | 0.0\% | 0.0\% | 0.0\% | 0.4\% | 0.6\% |
| Liberty | 2.2\% | 1.0\% | 1.0\% | 1.9\% | 2.9\% | 3.7\% |
| Madison | 0.5\% | 0.0\% | 0.5\% | 0.5\% | 0.5\% | 1.0\% |
| Manatee | 0.3\% | 0.8\% | 0.9\% | 0.5\% | 0.0\% | 1.0\% |


| County | Percent Errors <br> (between BEBR's Projections and Unadjusted Projections) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 |
| Marion | 0.0\% | 0.1\% | 0.2\% | 0.8\% | 1.6\% | 2.5\% |
| Martin | 0.1\% | 0.1\% | 0.0\% | 0.0\% | 0.5\% | 1.2\% |
| Miami-Dade | 0.1\% | 0.1\% | 0.0\% | 0.3\% | 1.1\% | 1.9\% |
| Monroe | 1.3\% | 2.3\% | 3.3\% | 4.3\% | 4.9\% | 5.2\% |
| Nassau | 0.5\% | 0.7\% | 0.5\% | 0.1\% | 1.1\% | 2.7\% |
| Okaloosa | 0.2\% | 0.3\% | 0.2\% | 0.1\% | 0.6\% | 1.1\% |
| Okeechobee | 0.5\% | 0.9\% | 1.2\% | 1.6\% | 1.8\% | 2.2\% |
| Orange | 0.5\% | 0.8\% | 0.2\% | 0.9\% | 1.8\% | 2.9\% |
| Osceola | 0.9\% | 1.1\% | 0.1\% | 1.5\% | 2.7\% | 4.4\% |
| Palm Beach | 0.1\% | 0.2\% | 0.2\% | 0.3\% | 0.2\% | 1.0\% |
| Pasco | 0.1\% | 0.1\% | 0.4\% | 1.3\% | 2.3\% | 3.4\% |
| Pinellas | 0.1\% | 0.1\% | 0.1\% | 0.3\% | 0.6\% | 0.7\% |
| Polk | 0.3\% | 0.5\% | 0.1\% | 0.9\% | 1.8\% | 2.8\% |
| Putnam | 0.0\% | 0.3\% | 0.5\% | 0.7\% | 1.0\% | 1.1\% |
| St. Johns | 0.7\% | 0.4\% | 0.4\% | 1.4\% | 2.9\% | 4.6\% |
| St. Lucie | 0.0\% | 0.1\% | 0.4\% | 1.0\% | 1.9\% | 3.0\% |
| Santa Rosa | 0.3\% | 0.2\% | 0.4\% | 1.5\% | 2.6\% | 3.8\% |
| Sarasota | 0.3\% | 0.2\% | 0.0\% | 0.1\% | 0.2\% | 0.0\% |
| Seminole | 0.2\% | 0.2\% | 0.1\% | 0.1\% | 0.2\% | 0.9\% |
| Sumter | 0.0\% | 0.1\% | 1.1\% | 2.3\% | 4.0\% | 5.8\% |
| Suwannee | 0.4\% | 0.8\% | 1.2\% | 1.5\% | 2.2\% | 2.9\% |
| Taylor | 2.2\% | 3.0\% | 4.6\% | 6.2\% | 7.3\% | 8.4\% |
| Union | 0.0\% | 1.8\% | 3.0\% | 4.8\% | 6.0\% | 7.8\% |
| Volusia | 0.2\% | 0.3\% | 0.4\% | 0.5\% | 0.4\% | 0.4\% |
| Wakulla | 0.0\% | 1.4\% | 1.9\% | 2.3\% | 2.0\% | 1.7\% |
| Walton | 0.8\% | 1.2\% | 0.9\% | 0.1\% | 1.2\% | 3.0\% |
| Washington | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.4\% | 0.4\% |

## Projections of Florida 2050-2070 Population by County

## State projections

Although the cohort-component method is a better way to make population projections at the state level, the information needed to apply the method such as birth rates, death rates, and migration rates for the distant future years from 2050 to 2070 is limited. A simplified method was used to develop state projections. Three different techniques were explored:

- Linear - the population will change by the same number of persons in each future year as the average annual change during the base period.
- Exponential - the population will change at the same percentage rate in each future year as the average annual rate during the base period.
- Logarithmic - the population will rapidly increase in size until it reaches a certain point, called the carrying capacity. At this point, the resources are not enough to support the population.

For all three techniques, the base periods of forty-seven years (1998-2045) were used to develop the state-level projections. The population data for 1998-2018 in one-year increment were obtained from the annual release of Florida Estimates of Population Report by BEBR, while the population data for 2020 - 2045 in five-year increment were obtained from the BEBR Projections of Florida Population by County published in April 2019. As mentioned earlier, the medium projections were used as recommended by BEBR.

This method produced three projections for each projection year (2050, 2055, 2060, 2065, 2070). After a careful review of the three projections, it was determined that the linear method produced the most reasonable state-level projections and, therefore, were used as the basis for county level population projections.

## County projections

The country level population projections for 2050-2070 followed the same methodology as described in the previous section. Five (5) techniques (Linear, Exponential, Share-of-growth, shift-share, and ConstantShare) were used to produce eleven projections. Five (5) averages (AVE-11, AVE-9, AVE-7, AVE-5, and AVE3) were calculated and different averages were used for different counties. The resulting projections were evaluated by comparing them with historical population trends for each county. Adjustments were made when the initial projections were deemed to be inconsistent with historical growth pattern prior to 2018 or BEBR projected growth trends between 2020 and 2045. Figure 1 graphically illustrates the process to develop the county-level population projections for 2050-2070.


Figure 1 2050-2070 County-Level Projection Process

The initial projections provided best fit for most of the 67 counties based on historical data. However, adjustments were needed for 25 counties (Baker, Bradford, Charlotte, Collier, Dixie, Franklin, Gadsden, Glades, Hardee, Jackson, Jefferson, Lafayette, Lake, Manatee, Marion, Monroe, Okaloosa, Osceola, Palm Beach, Pinellas, Putnam, Seminole, Suwannee, Taylor and Union) as the initial projections showed inconsistent growth patterns. The adjustments were made by conducting regression analysis using the 2018 population estimate and population projections for 2020 to 2045 . Linear, Exponential, and Logarithmic techniques were used to produce additional three sets of population projections for each of the 25 counties. The average of the three projections was used for the 25 counties. A further review indicated that the resulting projections for Dixie and Union counties still showed illogical growth patterns. Therefore, further adjustment were made for the two counties based on their historical growth trends. The final projected populations by county for 2050-2070 are presented in Table 4 together with the BEBR projected populations for 2020-2045.

Table 4 Projections of Florida Population by County (2020-2070 with Estimates for 2018)

|  | Census | Estimate (BEBR) | Projections (BEBR) |  |  |  |  |  | Projections (FDOT) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| County | 2010 | 2018 | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 | 2055 | 2060 | 2065 | 2070 |
| Alachua | 247,336 | 263,291 | 268,300 | 279,300 | 288,600 | 296,500 | 303,500 | 309,800 | 318,700 | 327,700 | 336,800 | 345,900 | 355,000 |
| Baker | 27,115 | 27,652 | 28,300 | 29,500 | 30,600 | 31,400 | 32,200 | 32,800 | 34,100 | 35,100 | 36,100 | 37,200 | 38,200 |
| Bay | 168,852 | 181,199 | 178,500 | 189,600 | 198,200 | 205,600 | 211,800 | 216,900 | 218,300 | 224,500 | 230,800 | 237,000 | 243,200 |
| Bradford | 28,520 | 28,057 | 28,600 | 28,800 | 28,900 | 29,000 | 29,100 | 29,200 | 29,400 | 29,600 | 29,800 | 30,000 | 30,100 |
| Brevard | 543,376 | 583,563 | 598,500 | 630,300 | 656,300 | 678,700 | 698,700 | 716,900 | 738,900 | 768,000 | 798,200 | 829,600 | 862,200 |
| Broward | 1,748,066 | 1,897,976 | 1,942,700 | 2,041,100 | 2,120,300 | 2,183,000 | 2,238,300 | 2,290,500 | 2,350,800 | 2,406,600 | 2,458,200 | 2,505,800 | 2,549,200 |
| Calhoun | 14,625 | 15,093 | 14,900 | 15,500 | 15,900 | 16,300 | 16,700 | 17,000 | 17,400 | 17,500 | 17,600 | 17,700 | 17,700 |
| Charlotte | 159,978 | 177,987 | 183,700 | 196,000 | 206,100 | 214,600 | 222,100 | 229,100 | 242,100 | 252,200 | 262,500 | 272,900 | 283,600 |
| Citrus | 141,236 | 145,721 | 148,600 | 155,300 | 161,100 | 166,200 | 170,200 | 173,700 | 177,400 | 182,400 | 187,400 | 192,400 | 197,300 |
| Clay | 190,865 | 212,034 | 220,200 | 239,100 | 255,700 | 269,700 | 281,700 | 292,600 | 302,100 | 316,300 | 330,400 | 344,500 | 358,600 |
| Collier | 321,520 | 367,347 | 382,800 | 418,400 | 449,500 | 475,200 | 496,800 | 516,100 | 556,100 | 586,700 | 618,200 | 650,400 | 683,500 |
| Columbia | 67,531 | 69,721 | 71,000 | 73,900 | 76,500 | 78,600 | 80,300 | 81,800 | 83,500 | 85,600 | 87,800 | 89,900 | 92,100 |
| DeSoto | 34,862 | 35,520 | 36,000 | 36,900 | 37,700 | 38,400 | 39,000 | 39,500 | 40,000 | 40,700 | 41,400 | 42,100 | 42,900 |
| Dixie | 16,422 | 16,489 | 16,600 | 16,800 | 16,900 | 17,000 | 17,100 | 17,200 | 17,300 | 17,400 | 17,500 | 17,600 | 17,700 |
| Duval | 864,263 | 952,861 | 981,900 | 1,044,700 | 1,095,200 | 1,139,100 | 1,177,600 | 1,212,100 | 1,241,100 | 1,286,300 | 1,331,400 | 1,376,500 | 1,421,700 |
| Escambia | 297,619 | 318,560 | 324,400 | 337,300 | 347,600 | 355,500 | 362,100 | 367,700 | 374,400 | 383,800 | 393,300 | 402,700 | 412,200 |
| Flagler | 95,696 | 107,511 | 112,500 | 123,900 | 134,400 | 143,600 | 151,600 | 159,000 | 164,600 | 174,300 | 184,100 | 194,200 | 204,500 |
| Franklin | 11,549 | 12,009 | 12,100 | 12,700 | 13,100 | 13,500 | 13,800 | 14,000 | 14,600 | 15,000 | 15,400 | 15,800 | 16,200 |
| Gadsden | 46,389 | 47,828 | 48,100 | 48,400 | 48,500 | 48,600 | 48,700 | 48,800 | 49,000 | 49,200 | 49,400 | 49,500 | 49,700 |
| Gilchrist | 16,939 | 17,424 | 17,800 | 18,700 | 19,400 | 20,000 | 20,600 | 21,100 | 21,600 | 22,300 | 23,100 | 23,900 | 24,700 |
| Glades | 12,884 | 13,002 | 13,200 | 13,600 | 13,900 | 14,100 | 14,300 | 14,500 | 14,900 | 15,200 | 15,400 | 15,700 | 16,000 |
| Gulf | 15,863 | 16,499 | 16,400 | 16,900 | 17,300 | 17,700 | 18,100 | 18,400 | 18,800 | 19,100 | 19,500 | 19,800 | 20,200 |
| Hamilton | 14,799 | 14,621 | 14,900 | 15,200 | 15,300 | 15,400 | 15,500 | 15,600 | 15,700 | 15,900 | 16,000 | 16,200 | 16,300 |
| Hardee | 27,731 | 27,296 | 27,300 | 27,300 | 27,400 | 27,400 | 27,400 | 27,400 | 27,400 | 27,500 | 27,500 | 27,500 | 27,500 |
| Hendry | 39,140 | 39,586 | 40,300 | 41,900 | 43,200 | 44,400 | 45,500 | 46,500 | 47,400 | 48,600 | 49,800 | 51,000 | 52,300 |
| Hernando | 172,778 | 185,604 | 191,700 | 205,800 | 218,300 | 229,200 | 238,400 | 246,900 | 258,200 | 269,500 | 280,900 | 292,300 | 303,600 |
| Highlands | 98,786 | 102,525 | 104,100 | 107,500 | 110,300 | 112,700 | 114,600 | 116,300 | 118,500 | 121,000 | 123,400 | 125,900 | 128,400 |
| Hillsborough | 1,229,226 | 1,408,864 | 1,466,800 | 1,598,400 | 1,708,600 | 1,800,200 | 1,878,700 | 1,950,500 | 2,050,200 | 2,152,900 | 2,255,700 | 2,358,400 | 2,461,100 |
| Holmes | 19,927 | 20,133 | 20,300 | 20,600 | 20,900 | 21,000 | 21,200 | 21,400 | 21,700 | 21,900 | 22,200 | 22,400 | 22,600 |
| Indian River | 138,028 | 151,825 | 157,200 | 169,300 | 179,400 | 187,700 | 194,700 | 200,900 | 205,100 | 213,400 | 221,800 | 230,100 | 238,400 |
| Jackson | 49,746 | 50,435 | 50,200 | 50,700 | 51,200 | 51,500 | 51,800 | 52,100 | 52,500 | 52,800 | 53,200 | 53,500 | 53,900 |
| Jefferson | 14,761 | 14,733 | 14,900 | 15,200 | 15,400 | 15,500 | 15,600 | 15,800 | 16,000 | 16,200 | 16,400 | 16,600 | 16,800 |
| Lafayette | 8,870 | 8,501 | 8,700 | 8,900 | 9,200 | 9,400 | 9,500 | 9,600 | 9,900 | 10,100 | 10,300 | 10,600 | 10,800 |
| Lake | 297,052 | 342,917 | 360,700 | 402,100 | 437,200 | 467,400 | 493,600 | 517,200 | 563,900 | 600,600 | 638,400 | 677,400 | 717,900 |
| Lee | 618,754 | 713,903 | 747,400 | 824,400 | 892,100 | 949,800 | 999,900 | 1,045,200 | 1,104,600 | 1,165,800 | 1,227,000 | 1,288,100 | 1,349,300 |
| Leon | 275,487 | 292,332 | 298,300 | 311,900 | 322,800 | 331,500 | 339,200 | 346,000 | 350,400 | 359,800 | 369,300 | 378,700 | 388,100 |


| County | Census | Estimate (BEBR) | Projections (BEBR) |  |  |  |  |  | Projections (FDOT) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2010 | 2018 | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 | 2055 | 2060 | 2065 | 2070 |
| Levy | 40,801 | 41,054 | 41,600 | 42,900 | 44,000 | 44,900 | 45,600 | 46,300 | 47,000 | 47,900 | 48,900 | 49,800 | 50,700 |
| Liberty | 8,365 | 8,915 | 9,300 | 9,700 | 10,000 | 10,300 | 10,500 | 10,800 | 11,000 | 11,400 | 11,700 | 12,000 | 12,400 |
| Madison | 19,224 | 19,473 | 19,500 | 19,700 | 19,800 | 19,900 | 20,000 | 20,100 | 20,200 | 20,300 | 20,400 | 20,500 | 20,700 |
| Manatee | 322,833 | 377,826 | 395,200 | 434,500 | 467,700 | 496,700 | 523,000 | 545,700 | 584,600 | 615,500 | 646,200 | 676,900 | 707,600 |
| Marion | 331,298 | 353,898 | 363,700 | 386,200 | 406,200 | 423,600 | 438,200 | 451,400 | 476,200 | 495,600 | 515,400 | 535,600 | 556,100 |
| Martin | 146,318 | 155,556 | 159,100 | 167,000 | 173,900 | 180,200 | 185,800 | 190,800 | 194,900 | 201,100 | 207,200 | 213,400 | 219,600 |
| Miami-Dade | 2,496,435 | 2,779,322 | 2,861,600 | 3,040,300 | 3,190,200 | 3,315,900 | 3,427,200 | 3,523,500 | 3,611,000 | 3,727,700 | 3,840,600 | 3,949,900 | 4,055,500 |
| Monroe | 73,090 | 73,940 | 74,000 | 74,200 | 74,300 | 74,400 | 74,600 | 74,700 | 74,900 | 75,000 | 75,100 | 75,300 | 75,400 |
| Nassau | 73,314 | 82,748 | 86,400 | 94,800 | 102,100 | 108,600 | 113,900 | 118,600 | 125,500 | 132,300 | 139,000 | 145,800 | 152,600 |
| Okaloosa | 180,822 | 198,152 | 202,600 | 212,100 | 220,400 | 227,400 | 233,400 | 239,100 | 249,200 | 257,200 | 265,200 | 273,400 | 281,700 |
| Okeechobee | 39,996 | 41,120 | 41,500 | 42,400 | 43,100 | 43,600 | 44,200 | 44,700 | 45,200 | 45,900 | 46,500 | 47,100 | 47,800 |
| Orange | 1,145,956 | 1,349,597 | 1,415,500 | 1,568,100 | 1,694,000 | 1,799,300 | 1,891,800 | 1,975,300 | 2,051,300 | 2,164,300 | 2,277,300 | 2,390,300 | 2,503,300 |
| Osceola | 268,685 | 352,496 | 380,700 | 445,300 | 500,200 | 548,100 | 591,000 | 630,400 | 707,200 | 769,000 | 833,800 | 902,100 | 974,200 |
| Palm Beach | 1,320,134 | 1,433,417 | 1,473,700 | 1,563,100 | 1,641,000 | 1,707,500 | 1,763,200 | 1,811,000 | 1,909,500 | 1,984,700 | 2,061,100 | 2,138,700 | 2,217,700 |
| Pasco | 464,697 | 515,077 | 534,500 | 579,400 | 619,900 | 654,000 | 682,900 | 708,900 | 742,000 | 778,800 | 815,800 | 853,200 | 890,900 |
| Pinellas | 916,542 | 970,532 | 983,900 | 1,012,900 | 1,034,300 | 1,050,600 | 1,063,500 | 1,075,000 | 1,103,400 | 1,123,200 | 1,143,100 | 1,163,100 | 1,183,300 |
| Polk | 602,095 | 673,028 | 699,600 | 758,900 | 807,900 | 849,400 | 884,700 | 916,200 | 938,900 | 980,500 | 1,022,100 | 1,063,700 | 1,105,300 |
| Putnam | 74,364 | 72,981 | 73,100 | 73,200 | 73,300 | 73,400 | 73,500 | 73,600 | 73,700 | 73,800 | 73,900 | 74,000 | 74,200 |
| St. Johns | 190,039 | 238,742 | 256,100 | 295,900 | 329,500 | 358,600 | 384,600 | 408,500 | 433,100 | 463,900 | 494,700 | 525,500 | 556,200 |
| St. Lucie | 277,789 | 302,432 | 313,100 | 337,500 | 359,500 | 378,700 | 395,100 | 410,100 | 421,900 | 440,600 | 459,300 | 478,000 | 496,700 |
| Santa Rosa | 151,372 | 174,887 | 182,600 | 199,900 | 214,700 | 226,900 | 237,500 | 247,000 | 256,600 | 269,700 | 282,900 | 296,000 | 309,200 |
| Sarasota | 379,448 | 417,442 | 431,100 | 460,500 | 484,300 | 505,200 | 523,700 | 540,200 | 555,900 | 583,200 | 611,800 | 641,800 | 673,300 |
| Seminole | 422,718 | 463,560 | 477,800 | 508,500 | 533,500 | 555,500 | 573,700 | 589,200 | 622,300 | 647,300 | 672,700 | 698,500 | 724,700 |
| Sumter | 93,420 | 124,935 | 133,900 | 155,500 | 175,100 | 191,700 | 206,200 | 219,500 | 239,300 | 257,200 | 275,100 | 293,000 | 310,900 |
| Suwannee | 41,551 | 44,879 | 45,900 | 48,200 | 50,200 | 52,000 | 53,400 | 54,600 | 57,100 | 59,100 | 61,000 | 63,000 | 65,000 |
| Taylor | 22,570 | 22,283 | 22,900 | 23,400 | 23,900 | 24,300 | 24,600 | 24,900 | 25,600 | 26,000 | 26,500 | 27,000 | 27,400 |
| Union | 15,535 | 15,867 | 16,100 | 16,300 | 16,500 | 16,600 | 16,700 | 16,700 | 16,800 | 16,800 | 16,900 | 16,900 | 17,000 |
| Volusia | 494,593 | 531,062 | 544,100 | 571,700 | 594,300 | 613,600 | 629,900 | 644,600 | 661,600 | 678,000 | 693,200 | 707,400 | 720,500 |
| Wakulla | 30,776 | 31,943 | 32,800 | 35,200 | 37,200 | 38,900 | 40,300 | 41,500 | 43,000 | 44,800 | 46,500 | 48,200 | 50,000 |
| Walton | 55,043 | 67,656 | 71,800 | 81,300 | 89,500 | 96,600 | 102,800 | 108,400 | 112,900 | 120,000 | 127,100 | 134,200 | 141,300 |
| Washington | 24,896 | 25,129 | 25,500 | 26,300 | 27,000 | 27,500 | 27,900 | 28,300 | 29,000 | 29,600 | 30,200 | 30,800 | 31,400 |
| FLORIDA | 18,801,310 | 20,840,568 | 21,517,100 | 23,050,800 | 24,340,500 | 25,429,300 | 26,373,300 | 27,219,700 | 28,307,400 | 29,471,900 | 30,637,400 | 31,804,900 | 32,976,100 |

