

## POPULATION PROJECTIONS AND METHODOLOGY

### A. SUMMARY

Winter Springs' growth since the 1950's has predominantly been accomplished through expansion of land area through annexation of adjacent developing land. By the 1970's, the City more than doubled its land mass with the annexation of the Tuscawilla PUD. Over the last ten years, the City's land mass increased by only 7%. This reduction in the rate of land expansion has also been reflected in the rate of population growth- Population growth remained steady, but slowed over the last five years (2002-2007) to half the rate experienced in the prior five year period, despite the housing boom. Additionally, growth in population is expected to show a substantial slowing in 2008, due to the subprime mortgage crisis effectively halting residential construction. However, once this crisis is over, the City should see population growth resuming to 2007 rates and continuing for the next decade at a steady rate and concentrated primarily in the Town Center. Growth rates will continue to slow during the last half of the planning period until the City reaches build-out.

Updated population projections are important in ensuring that the City is able to properly plan for its growth, such as infrastructure and service provision. The most comprehensive source for statistically accurate information on the City of Winter Springs is the decennial Census of Population and Housing conducted every 10 years by the federal government. In Florida, the Census also serves as the base for the annual population estimates prepared by the University of Florida, Bureau of Economic and Business Research (BEBR). The most recent Census and BEBR population figures for the City of Winter Springs are shown in Table P-1.

**Table P – 1: Population Growth**

| Year | Population | Percent Change from Previous | Average* Annual % Growth Rate | Source |
|------|------------|------------------------------|-------------------------------|--------|
| 1960 | 609        | ---                          | ---                           | Census |
| 1970 | 1,161      | 90.6                         | 9.1                           | Census |
| 1980 | 10,475     | 802.2                        | 80.2                          | Census |
| 1990 | 22,151     | 111.5                        | 11.2                          | Census |
| 2000 | 30,860     | 39.3                         | 3.9                           | Census |
| 2001 | 31,864     | 3.3                          | 3.3                           | BEBR   |
| 2002 | 32,082     | 0.7                          | 0.7                           | BEBR   |
| 2003 | 32,572     | 1.5                          | 1.5                           | BEBR   |
| 2004 | 32,955     | 1.2                          | 1.2                           | BEBR   |
| 2005 | 33,321     | 1.1                          | 1.1                           | BEBR   |
| 2006 | 33,971     | 2.0                          | 2.0                           | BEBR   |
| 2007 | 34,433     | 1.4                          | 1.4                           | BEBR   |
| 2008 | 34,390     | -0.1                         | -0.1                          | BEBR   |

\*Average as applied here, means the arithmetic mean.

Source: U.S. Bureau of the Census; University of Florida, Bureau of Economic and Business Research; Sievers & Associates

Population growth in the City of Winter Springs was extremely high during the 1970's and 1980's, but has slowed somewhat since 1990. Between 1990 and 2000, the City's population

grew from 22,151 to 30,860, representing a 39.3% increase. Comparing information from the 1990 Census and 2000 Census in percentage terms also provides insight into the changing demographics of the City as the growth rate decreases.

With the City now approaching its ultimate built-out population, historic growth rates are only one factor to take into consideration in the development of updated population projections. Neighboring cities, Lake Jesup, and unincorporated areas consisting of developed areas and conservation lands encircle the City. The remaining developable acreage in the City is somewhat limited, with the Town Center and the Greenway Interchange District providing the largest future development areas. Nearly 30 parcels exist in enclave areas, but these total less than 400 acres. It is anticipated that the majority of residential development in the City through the end of the planning horizon will take place in the Town Center.

As can be seen from the data in Table P-1, the City of Winter Springs growth rates have decreased each decade. The current decade is no exception as the annual growth rate during the first six years is 1.6%, less than half of the 3.4% annual growth rate experienced in the 1990's.

## **B. METHODOLOGIES**

The previous population projections for the City were prepared in 2001 using information from the 2000 Census. Subsequent to the development of those projections, the Census Bureau made a correction to the 2000 population figure, dropping it from 31,666 to 30,860 (typically, these types of corrections are made when it is determined that the Census Bureau erroneously allocated one or more housing units to the wrong jurisdiction). The consequence of this correction is that where it had previously been thought that the City grew 43.0% between 1990 and 2000, in reality the growth rate was 39.3%. In terms of annual growth, the average growth rate during the 1990's was 3.4%, not 3.6% as originally believed.

The 2001 Comprehensive Plan projected a 2005 population of 33,399 which compares very favorably with the 2005 BEBR estimate of 33,321. Annexations since the adoption of the Comprehensive Plan have not added a significant amount of acreage to the City limits. With less than 400 acres of enclaves remaining and the anticipation that the areas annexed during each 5-year period will be consistent with recent rates of annexation, no adjustments for annexation are made in the methodologies used in this update.

The population projection methodologies most appropriate for municipalities are generally (1) ratio methodologies and (2) extrapolation techniques. Both types of techniques were considered for the City of Winter Springs population projections update.

### **1. Ratio Methodologies**

Although many types of ratio methodologies exist, many of them involve types of data that are not readily available at the municipal level. However, one appropriate ratio methodology for municipal population projections involves comparing the municipal population to the population of its county as a whole. For simplicity, the actual ratio may not be calculated as such, but may be represented by the percentage of the total county population that is accounted for by the City's population.

As shown in Table P-2, the percentage of total Seminole County population accounted for by the City of Winter Springs rose considerably between 1970 and 1990 with continued, but growth was somewhat slower between 1990 and 2000.

**Table P - 2: Winter Springs / Seminole County Population Comparison**

| Year | Winter Springs Population | Seminole County Population | Percent of County Population |
|------|---------------------------|----------------------------|------------------------------|
| 1960 | 609                       | 54,947                     | 1.1                          |
| 1970 | 1,161                     | 83,692                     | 1.4                          |
| 1975 | 3,467                     | 135,600                    | 2.6                          |
| 1980 | 10,350                    | 179,752                    | 5.8                          |
| 1985 | 15,315                    | 226,304                    | 6.8                          |
| 1990 | 22,151                    | 287,521                    | 7.7                          |
| 1995 | 25,673                    | 324,100                    | 7.9                          |
| 2000 | 30,860                    | 365,199                    | 8.5                          |
| 2005 | 33,321                    | 411,744                    | 8.1                          |
| 2006 | 33,971                    | 420,667                    | 8.1                          |
| 2007 | 34,433                    | 425,698                    | 8.1                          |
| 2008 | 34,390                    |                            |                              |

Source: U.S. Bureau of the Census; University of Florida, Bureau of Economic and Business Research; Sievers & Associates

From the table (which uses data from the 2001 Comprehensive Plan supplemented by more recent figures), it can be seen that while the percentage of Seminole County residents who reside in Winter Springs rose consistently for decades, that trend has recently leveled off as new acreage annexed into the City has also declined. In the years ahead, Winter Springs will likely continue to make up an increasing smaller percentage of Seminole County’s overall population growth.

With this potential shift and other changes in population trends, extrapolation methodologies may be more appropriate for the development of updated population projections for Winter Springs.

**2. Extrapolation Methodologies**

Extrapolation methodologies often produce good population projections as they are based on current trends continuing into the future. However, it is important to examine the trends to determine that they are likely to continue. A review of growth rates experienced by the City led to the conclusion that using data prior to the year 2000 would lead to projections that were likely to be too high based on more recent growth rates and the approaching build-out of the City. As typically occurs when a city has grown rapidly, the rate of growth will decline over time. For example, while it was possible in the 1970’s for the City of Winter Springs population to increase more than 800% in one decade, such a growth rate now would result in a 2017 population of over 300,000, clearly not a realistic possibility. Even including data from the 1990’s in the trend is likely to produce figures that would be too high. The annual growth rate for the past five years is substantially less than the growth in 2000-2001, even though it was a

period of substantial residential growth around the State. The 2002-2007 period was selected as the base for the extrapolations, although growth has declined dramatically since 2007.

Two extrapolations were conducted – an arithmetic extrapolation and a geometric extrapolation. The arithmetic extrapolation uses a constant numerical change in growth – the City of Winter Springs added an average of approximately 470 residents per year so far during this decade, so the arithmetic extrapolation population projection assumes that 470 additional residents will be added each year in the future. The geometric extrapolation uses a constant percentage change in growth through 2015 and then a reduced percentage change that remains constant from 2015 through 2030. For 2002-2007 growth has averaged 1.36% annually, so the geometric extrapolation population projection assumes that the City’s population will continue to grow at a 1.36% rate through 2015 and at a 1.0% rate from 2015 through the end of the planning horizon.

The projections produced by these two techniques appear in Table P-3 and Table P-4. As can be seen by comparing the tables, while the geometric projections exceed the arithmetic projections through 2015, the lower geometric percentage change from 2015 through 2030 results in a lower population projection for the geometric extrapolation for the planning horizon. The arithmetic extrapolation produces a 2030 projection that is 1.6% higher than the 2030 projection from the geometric extrapolation.

**Table P - 3: Arithmetic Extrapolation Projections**

| Year | Population | Percent Change from Previous | Annual Growth Rate (Percent) |
|------|------------|------------------------------|------------------------------|
| 2005 | 33,321     | ---                          | ---                          |
| 2010 | 35,851     | 5.5                          | 1.4                          |
| 2015 | 38,201     | 6.6                          | 1.3                          |
| 2020 | 40,551     | 6.2                          | 1.2                          |
| 2025 | 42,901     | 5.8                          | 1.1                          |
| 2030 | 45,251     | 5.5                          | 1.1                          |

Source: Winter Springs, 2007

**Table P - 4: Geometric Extrapolation Projections**

| Year | Population | Percent Change from Previous | Annual Growth Rate (Percent) |
|------|------------|------------------------------|------------------------------|
| 2005 | 33,321     | ---                          | ---                          |
| 2010 | 35,857     | 5.6                          | 1.36                         |
| 2015 | 38,363     | 7.0                          | 1.36                         |
| 2020 | 40,319     | 5.1                          | 1.0                          |
| 2025 | 42,376     | 5.1                          | 1.0                          |
| 2030 | 44,538     | 5.1                          | 1.0                          |

Source: Winter Springs, 2007

**3. Recommended Methodology**

Due to the buildout of the City anticipated during the next few decades, it is recommended that the geometric extrapolation projections be used as the updated Comprehensive Plan population projections. Using these projections, it is anticipated that the City of Winter Springs will see its population grow from slightly less than 34,000 people in 2006 to more than 44,500 residents in 2030, a 31.1% increase. These figures are lower than corresponding figures from the Shimberg Center for Affordable Housing (Shimberg).

The City’s projections (Table P-5) indicate that the City will approach buildout in 2030 with a population of approximately 45,000. This figure was derived based on vacant land availability, environmental constraints, future land use designation, and expected densities.

**Table P - 5: Recommended Population Projections**

| Year | Population |
|------|------------|
| 2010 | 35,857     |
| 2015 | 38,363     |
| 2020 | 40,319     |
| 2025 | 42,376     |
| 2030 | 44,538     |

Source: Winter Springs, 2007

Based on these methodologies, the City finds the Shimberg population projections to be too high. Table P-6 illustrates the City’s Recommended Population Forecast in comparison to the Shimberg Forecast.

**Table P - 5: Population Forecast Comparison**

| Year | Shimberg Center Forecast | Winter Springs Recommended Forecast |
|------|--------------------------|-------------------------------------|
| 2010 | 36,929                   | 35,857                              |
| 2015 | 40,135                   | 38,363                              |
| 2020 | 43,114                   | 40,319                              |
| 2025 | 45,633                   | 42,376                              |
| 2030 | 47,921                   | 44,538                              |

Source: Shimberg Center for Affordable Housing, City of Winter Springs; Sievers & Associates

However, the Shimberg is an excellent resource for data related to housing types and demographics and is useful in assessing the detailed distributions across categories (e.g. age, income), needed as part of the data and analysis of the Housing Element. For this reason, the Shimberg data is utilized within the Housing Element as a resource, even though the City disagrees with the Shimberg population forecasts.

**4. Seasonal Population Projections**

Seasonal population needs to be taken into account in planning service provision to residents. A review of records from the Florida Department of Business and Professional Regulation showed that the City of Winter Springs currently does not have any hotels, motels, transient apartments, rooming houses, bed and breakfast establishments, resort condominiums, or resort dwellings. No seasonal population attributable to those types of units needs to be calculated.

Published 2000 Census of Population and Housing reports show 87 housing units in the City of Winter Springs that were for seasonal, recreational or occasional use, but do not provide a breakdown by type of unit. It should be noted that seasonal residents represent well under 1% of the permanent population of the City. Using the year 2000 figure for the City of 2.63 persons per household, the seasonal population for the City is 229 individuals for the year 2000.

Assuming that the ratio of permanent residents to seasonal residents remains the same through the end of the planning horizon, it is possible to project the seasonal population for future years. These projections of the seasonal population are shown in Table P-6.

**Table P-6: Recommended Seasonal Population Projections**

| Year | Population |
|------|------------|
| 2010 | 266        |
| 2015 | 285        |
| 2020 | 299        |
| 2025 | 314        |
| 2030 | 331        |

Source: Winter Springs, 2007