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PINELLAS COUNTY

ECONOMIC DEVELOPMENT

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PINELLAS COUNTY POPULATION PROJECTION 2016-2021

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Executive Summary

Between 2016 and 2021, Pinellas County's population is projected to grow from 960,730 to 1,036,369. This increase of 75,639 people, a 7.9% gain, is expected to occur entirely because of net migration. The county's natural change in population is projected to be negative during this period with a decline of 10,811 people. 43,515 children are projected to be born, but this will be outweighed by a calculated 54,326 deaths that will also occur during this period. Migration from other parts of the United States and abroad however is projected to more than offset this decline. 86,450 people are projected to move to Pinellas County. Net migrants however understate the population flux as 305,550 people are expected to move to Pinellas County and 219,100 people are expected to move out of the county between 2016 and 2021.

Data in this analysis was collected from the American Community Survey 2016 1-year population estimates and the Florida Department of Health. Calculations were all made using a static cohort analysis of population subgroups. The formula used to calculate the 2021 population is:

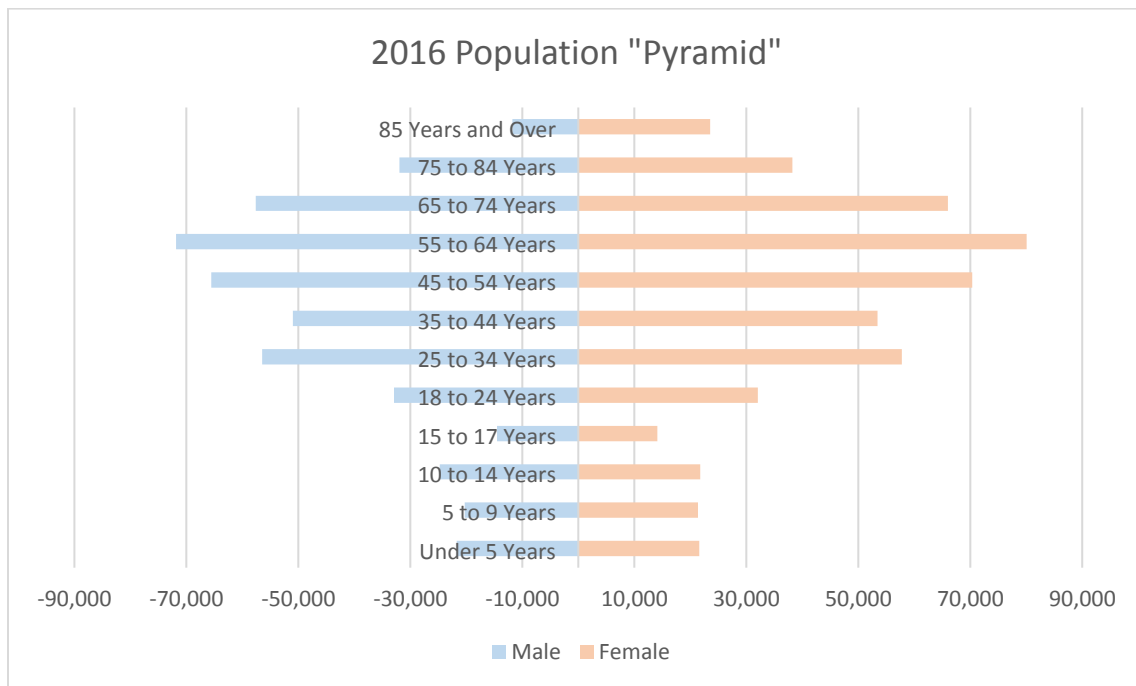
$$\text{Population}_{2021} = \text{Population}_{2016} + \text{Net Natural Change} + \text{Net Migration}$$

A more detailed version of the formula is that:

$$\text{Population}_{2021} = \text{Population}_{2016} + (\text{Births} - \text{Deaths}) + (\text{In-Migration} - \text{Out-Migration})$$

A. 2016 Population

	Male	Female
Under 5 Years	21,728	21,593
5 to 9 Years	20,295	21,388
10 to 14 Years	24,750	21,754
15 to 17 Years	14,522	14,147
18 to 24 Years	32,921	32,071
25 to 34 Years	56,447	57,808
35 to 44 Years	50,951	53,442
45 to 54 Years	65,568	70,335
55 to 64 Years	71,865	80,082
65 to 74 Years	57,581	66,012
75 to 84 Years	31,929	38,244
85 Years and Over	11,768	23,529
Total	460,325	500,405
Entire Population	960,730	



A population "pyramid" is a simple graphical representation that shows age distribution in an area. The term "pyramid" is a slight misnomer because the charts rarely look like a pyramid outside of the developing world. The negative number for males is used to better display the county's gender balance. Pinellas County's status as a retirement destination also makes the shape generally more top heavy.

B. Natural Change

The Florida Department of Public Health’s annual birth rate information was used to determine the expected number of births per year for the female population in each age band. The birth rate figures are the 2016 annual birth rates by age band. Birth rates may change in the future, but this projection works under the assumption that birth rates will remain constant over the time period.

Female Population (2016)		Annual Birth Rate per 1000	Expected Births
Under 5 Years	21,593	0	0
5 to 9 Years	21,388	0	0
10 to 14 Years	21,754	0.2	4
15 to 17 Years	14,147	8.6	122
18 to 24 Years	32,071	58.31	1,870
25 to 34 Years	57,808	89.57	5,178
35 to 44 Years	53,442	28.35	1,515
45 to 54 Years	70,335	0.2	14
55 to 64 Years	80,082	0	0
65 to 74 Years	66,012	0	0
75 to 84 Years	38,244	0	0
85 Years and Over	23,529	0	0

Children born can then be divided into male and female. Even though general intuition would assume that male and female births would be roughly equal, male births typically slightly outnumber female births. This analysis uses the average ratio collected from birth certificates between 1940 and 2002 by Matthews and Hamilton at the Centers for Disease Control (T.J. Mathews, 2005). Their ratio is 1,051 male births for every 1,000 female births.

	Male 1 Year	Female 1 Year	Male 5 Year	Female 5 Year
Birth by Sex	4,460	4,243	22,299	21,217
Total Births	8,703		43,515	

Survivorship rates (the percentage of a population still living after a period of time) at the one and five year periods are then used to subtract the natural population decrease from the population. Male and female survivorship rates were gathered from the Florida Department of Public Health by converting the crude deaths statistic into a survivorship statistic. The crude death rate figures used are the 2006 to 2016 average death rate by age band.

Female	2016 Population	Crude Death Rate/100k	1 Year Survival Rate	1 Year Deaths	5 Year Survival Rate	5 Year Deaths
Under 5 Years	21,593	152.7	0.9985	33	0.9924	164
5 to 9 Years	21,388	7.8	0.9999	2	0.9996	8
10 to 14 Years	21,754	11.9	0.9999	3	0.9994	13
15 to 17 Years	14,147	27.9	0.9997	4	0.9986	20
18 to 24 Years	32,071	62.3	0.9994	20	0.9969	100
25 to 34 Years	57,808	92.1	0.9991	53	0.9954	266
35 to 44 Years	53,442	173.2	0.9983	93	0.9914	461
45 to 54 Years	70,335	383.8	0.9962	270	0.9810	1,339
55 to 64 Years	80,082	708.7	0.9929	568	0.9651	2,798
65 to 74 Years	66,012	1,389.4	0.9861	917	0.9324	4,460
75 to 84 Years	38,244	3,528.6	0.9647	1,349	0.8356	6,288
85 Years and Over	23,529	11,480.8	0.8852	2,701	0.5435	10,741

Male	2016 Population	Crude Death Rate/100k	1 Year Survival Rate	1 Year Deaths	5 Year Survival Rate	5 Year Deaths
Under 5 Years	21,728	170.5	0.9983	37	0.9915	185
5 to 9 Years	20,295	91.2	0.9991	19	0.9954	92
10 to 14 Years	24,750	87.6	0.9991	22	0.9956	108
15 to 17 Years	14,522	119	0.9988	17	0.9941	86
18 to 24 Years	32,921	148.7	0.9985	49	0.9926	244
25 to 34 Years	56,447	196.6	0.9980	111	0.9902	553
35 to 44 Years	50,951	296.5	0.9970	151	0.9853	751
45 to 54 Years	65,568	650.5	0.9935	427	0.9679	2,105
55 to 64 Years	71,865	1,316.2	0.9868	946	0.9359	4,607
65 to 74 Years	57,581	2,190.7	0.9781	1,261	0.8952	6,037
75 to 84 Years	31,929	4,911.3	0.9509	1,568	0.7774	7,107
85 Years and Over	11,768	12,677.0	0.8732	1,492	0.5077	5,793

Deaths Summary	1 Year	5 Year
Male	6,099	27,668
Female	6,012	26,658
Total	12,112	54,326

Natural Change Summary	Male	Female	Total
5 Year Births	22,299	21,217	43,516
5 Year Deaths	27,668	26,658	54,326
Net Change	-5,369	-5,441	-10,810

C. Migration

Natural change is only half of the story when projecting population. Pinellas County is a migration hub that features a churning population of people moving in and out of the county on a regular basis. The ACS has a simple way of tracking migration patterns as it asks respondents where they were living the previous year.

Pinellas In-Migration				
Age	Different County in Florida	Different State	Different Country	Total
1 to 4 Years	1,091	1,354	47	2,492
5 to 17 Years	2,687	2,214	494	5,395
18 to 24 Years	4,047	2,685	206	6,938
25 to 34 Years	4,967	5,821	579	11,367
35 to 44 Years	3,536	2,790	694	7,020
45 to 54 Years	3,248	4,789	326	8,363
55 to 64 Years	1,653	6,849	1,081	9,583
65 to 74 Years	1,520	3,539	920	5,979
75 Years and Over	1,317	2,486	170	3,973
Sum	24,066	32,527	4,517	61,110

Pinellas Out-Migration			
Age	Moved to Different County in Florida	Moved to Different State	Total
1 to 4 Years	918	652	1,570
5 to 17 Years	2,394	1,608	4,002
18 to 24 Years	6,441	2,997	9,438
25 to 34 Years	4,417	4,925	9,342
35 to 44 Years	3,670	1,812	5,482
45 to 54 Years	2,370	1,853	4,223
55 to 64 Years	2,514	2,216	4,730
65 to 74 Years	1,112	1,333	2,445
75 Years and Over	820	1,768	2,588
Sum	24,656	19,164	43,820

Age	Net Migration
1 to 4 Years	922
5 to 17 Years	1,393
18 to 24 Years	-2,500
25 to 34 Years	2,025
35 to 44 Years	1,538
45 to 54 Years	4,140
55 to 64 Years	4,853
65 to 74 Years	3,534
75 Years and Over	1,385
Sum	17,290

Annual net migration patterns put the population churn into perspective and show that Pinellas County’s population is incredibly dynamic. Holding migration patterns constant with 2016 figures projects that the county will gain 86,450 net new residents between 2016 and 2021. These headline numbers however mask the total amount of flux within the population as the five year migration of new residents into Pinellas projects to be almost one third of the county’s 2016 population! By the same token, about 2/9 of the county’s current population will have moved away during that same time period. Every age band is expected to grow on the net during this period except for the 18-24 demographic. 18-24 year olds however are an unusual demographic band because most likely the numbers are picking up on the net outward migration of students going off to university. All things being equal, it would be expected that Alachua (University of Florida) and Leon (Florida State University and Florida A&M) Counties see large annual net migration among the 18-24 demographic band.

	1 Year	5 Years
In-Migrants	+61,110	+305,550
Out-Migrants	-43,820	-219,100
Net Change	+17,290	+86,450

D. Calculations

$$\text{Population}_{2021} = \text{Population}_{2016} + (\text{Births} - \text{Deaths}) + (\text{In-Migration} - \text{Out-Migration})$$

$$\text{Population}_{2016} = 960,730$$

$$\text{Births} = 43,515$$

$$\text{Deaths} = 54,326$$

$$\text{Net Natural Change} = -10,811$$

$$\text{In-Migration} = 305,550$$

$$\text{Out-Migration} = 219,100$$

$$\text{Net Migration} = 86,450$$

$$\text{Population}_{2021} = 960,730 + (43,515 - 54,326) + (305,550 - 219,100)$$

$$\text{Population}_{2021} = 960,730 + (-10,811) + 86,450$$

$$\text{Population}_{2021} = 1,036,369$$

$$\text{Net Population Change} = 75,639$$

$$\text{Net Population \%Change} = \text{Net Population Change} / \text{Population}_{2016}$$

$$\text{Net Population \%Change} = 7.9\%$$