



SAN JUAN COUNTY  
DEPARTMENT OF COMMUNITY DEVELOPMENT

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STAFF REPORT

**TO:** San Juan County Council  
**VIA:** Erika Shook, AICP, Director, DCD *ES*  
Linda Kuller, AICP, Deputy Director, DCD  
**CC:** Mike Thomas, County Manager  
Amy Vira, Esq. Deputy Prosecuting Attorney  
**FROM:** Colin Maycock, AICP, Planner IV *CM*  
**SUBJECT:** 2036 Comprehensive Plan Update  
Population Projection – Follow-up information  
**DATE:** May 30, 2017  
**ATTACHMENTS:** *Forecast of the State Population* November 2011 Office of Financial  
Management (OFM)  
*County Growth Management (GMA) Population Projections by Age and  
Sex: 2010-2040, August 2012 Projections, OFM (Excerpts)*

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**BACKGROUND:** Per Council's request, this report provides additional information about the methods used by the OFM to develop population projections, the methods used by the U.S. Census Bureau to determine average household size, and the development histories of Eastsound and Lopez Village UGAs.

**1. Background on OFM Projection Methods**

The attached OFM documents summarize the methods and assumptions used by the OFM in the development of the State's official population estimates and GMA population projections.

The OFM's *Forecast of State Population, November, 2011* is the basis of the *County Growth Management Population Projections by Age and Sex: 2010-2040*. It contains:

- The difference between population estimates and population forecasts is identified in footnote '1', on Page 1.
- A description of the use of the Cohort Component Model on Page 1 which states:

The Office of Financial Management's (OFM) state population forecast is produced with the Cohort Component Model (CCM). A sophisticated

demographic accounting system that starts with most recent census counts by single year of age and gender, “survives” the age and gender specific cohorts forward in time, incorporates fertility and migration trends, and forecasts the total population forward combining all these inputs.

- A discussion of the assumptions that inform the development of the forecast and projected population cohorts for the State on Pages 1-4,
- Additional information about the forecast model including:
  - Fertility: Pages 1-2. San Juan has the second lowest fertility rate in the state.
  - Mortality: Page 2. The Crude Death Rate has been adjusted for the later part of the planning period consistent with the Social Security Administration’s intermediate mortality projections.
  - Net Migration: Pages 2-4. Short-term migration trends are based on an econometric model that weighs the State’s relative attractiveness to job seekers against that of California and other states.
- A discussion about State growth patterns and the different components of population change and presents considerations for age specific populations on Pages 5-11.

The *County Growth Management Population Projections by Age and Sex: 2010-2040* are based on the November, 2011, State forecast. Pages 1-12 of the GMA population projection report expand upon the assumptions and analysis in the cited 2011 document. The *County Growth Management Population Projections by Age and Sex: 2010-2040* begins with a general discussion of the November 2011, State forecast followed by a comparative evaluation of the 2007 and 2012 GMA population projections.

The comparative analysis of the components of population change in the *County Growth Management Population Projections by Age and Sex: 2010-2040* addresses the following:

- Actual migration rates that were lower than projected in 2007; Pages 1-2.
- Declining rates of natural increase over the planning horizon; Pages 2-3.
- Discussion of assumptions; Pages 3-4.
- County population projections: 2010 to 2040; Page 6.
- 2010 Census counts as a benchmark for the 2012 projections; Page 6.
- Discussion of County Projection Assumptions; Page 8.
  - Fertility: Page 9.
  - Mortality: Page 10.
  - Migration: Page 11.
- Discussion of high and low projection alternatives: Page 11.

## 2. Overview of U.S. Census Bureau (Census) methods for determining average household size.

Every decade, the Census attempts to physically count every person and housing unit in the Country. Since 1930, census day has been April 1<sup>st</sup>. People travelling or occupying a seasonal residence on that date are not counted at their location but are attributed to their usual (primary) residence.

The Census strives to establish people's "usual residence." The process of determining the location of an individual's usual residence, paradoxically, helps determine vacancy levels which, in turn, help define a jurisdiction's average household size.

The most common method of determining a respondent's usual residence is an initial questionnaire. The questionnaire is sent to all addresses in the U.S. and respondents are asked to identify their usual residence.

When a questionnaire is sent to a non-responsive address, there is a follow-up telephone call. If there is no response to the telephone calls, a field representative is sent to the property to interview any qualified respondents. The field representative may then determine the property to be vacant. One of the counterintuitive aspects of the Census data collection is that houses which are occupied when the field representative arrives, will be considered vacant if the respondents indicate that the house is not their usual residence.

Confronted with vacant housing units, the field representative's task is to determine the type of vacancy. A real estate sign, for example, may indicate that the unit is for sale or rent, in which case, the field representative will attempt to verify the type of vacancy with local realtors. All vacancies within the decennial census must be verified and, where possible, characterized as one of the following:

- For rent;
- Rented, not occupied;
- For sale only;
- Sold, not occupied;
- For seasonal, recreational or occasional use;
- For migrant workers; and
- Other vacant.

The San Juan County response rate to the 2010 Census mail out was a relatively low, forty-six percent, (the national response rate was seventy-four percent). The County's response rate is consistent with a high percentage of vacant and seasonally occupied residential units.

The number of vacant residential units is subtracted from the total number of residential units to determine the number of occupied residential units (and the vacancy rate). The total

population is divided by the number of occupied residential units to determine the average household size.

Additional housing data is collected by the American Community Survey (ACS). The ACS was established to provide an ongoing statistical analysis of the nation’s communities. The ACS collects data annually including the housing data the County submits to OFM regarding the number of residential and demolition permits issued in the previous year. The ACS reports that their surveys had a ninety-five percent response rate in 2015.

The Census collects basic household information, such as the number of people who reside in a given unit and the household’s tenure (owned, rented, occupied without payment), while the ACS collects a much broader array of information from respondents including:

- Resident information including name, spouse, offspring, ethnicity;
- Housing type: year built, rooms, bedrooms, length of tenure, acreage, hot and cold water, access to computers/smart phones, access to internet, number of vehicles, rent, mortgage, taxes; and
- Educational attainment, citizenship status, health insurance, veteran, type and length of employment.

As the ACS is a statistical survey based on a limited number of annual surveys, it took a minimum of five years to generate enough responses from smaller jurisdictions to develop a statistically valid baseline.

**Table 1. Average Household Size from different sources**

Agency	Year	Average Household Size	Source
U.S. Census Bureau	2010	2.05	DP-1 Profile of general population and housing characteristics: 2010
American Community Survey	Estimate	Margin of Error	<b>B25010: AVERAGE HOUSEHOLD SIZE OF OCCUPIED HOUSING UNITS BY TENURE - Universe: Occupied housing units 2011-2015 American Community Survey 5 year estimates.</b>
Total:	2.04	+/-0.05	
Owner Occupied	2.07	+/-0.06	
Renter Occupied	1.97	+/-0.08	

The average household size from the American Community Survey is based on the results of a statistical survey. The average household size from the decennial Census is based on the verification of usual residence, a verified vacancy rate and identification of occupied residences. Council expressed concerns regarding the average household size recorded by the American Community Survey. As the average household size in the Census is derived from tangible corroboration, Staff selected the Census average household size of 2.05 when calculating the potential new residential units in Lopez Village and Eastsound Urban Growth Areas below. (The 0.01 difference between the different average household figures is equal to 0.47 units per 100 new residents.)

### **3. Development history of Eastsound and Lopez Village Urban Growth Areas (UGAs).**

Council asked for an analysis of the developmental histories of the Eastsound and Lopez Village UGAs. Tables 1 and 2 below provide an overview of the recent development on Orcas and Lopez Islands and their respective UGA's.

The County's population projection is based on a State share methodology, (see staff's April, 11, 2017 technical memorandum). For the past twenty-six years, the County's ferry served islands have maintained consistent shares of the County's population. Orcas and Lopez Islands have designated UGA's that provide urban services and high density housing options. Population growth is allocated to the UGA's as a percentage of the Island's population rather than as a percentage of the County population growth; however, the method used for projecting the population growth in Eastsound UGA and Lopez Village UGA is different.

The projected population growth for Eastsound UGA compounds the population growth of Eastsound UGA relative the Orcas Island population. This means that over time, Eastsound UGA houses an increased share of the island's population. Eastsound UGA currently makes up 20.52 percent of the Orcas Island population. This percentage is projected to increase to 24.82 percent by 2036. This is the 'Compounded proportionate share projection,' discussed on page twenty-seven in staff's technical memorandum dated April 11, 2017.

The projected population growth for Lopez Village UGA does not compound the population growth relative to the Lopez Island population. Lopez Village UGA currently houses 6.93 percent of the Lopez Island population. The allocation of the island's population growth to Lopez Village assumes that the percentage of Lopez islands' population living in the village will remain constant over the next twenty years. This is the 'Proportionate share projection,' discussed on page thirty-two in staff's technical memorandum dated April 11, 2017.

**A. Development in Eastsound Subarea, UGA and Orcas Island 2010-2016**

Table 2 compares residential development on Orcas Island, Eastsound Subarea and the UGA.

**Table 2. Residential Permits on Orcas Island, Eastsound Urban Growth Area and Subarea**

Year	EASTSOUND		Orcas Island	Total Permits	Population	
	UGA	Subarea (Outside UGA)			UGA	Orcas Island
2010	15 Single Family Residence* (SFR) 1 Demolition (Demo)	2 SFR	27 SFR 3 Demo 2 Expired 1 Cancelled	51	1,078	5,220
2011	1 SFR 4 Demo	1 SFR	27 SFR 5 Demo	38	1,093	NA
2012	3 SFR 1 Commercial multi-family 1 Mixed-use 1 Demo		36 SFR 8 Demo 1 Cancelled	51	1,093	NA
2013	9 SFR 3 Demo	2 Cancelled	25 SFR 10 Demo 1 Cancelled	50	1,087	NA
2014	3 SFR 2 Mixed-use 1 Demo	1 Demo	39 SFR 10 Demo 1 Cancelled	57	1,098	NA
2015	14 SFR 1 Demo 1 Cancelled	1 SFR	30 SFR 7 Demo	54	1,096	NA
2016	7 SFR	5 SFR	27 SFR 12 Demo	51	1,107	5,395
<b>2010-2016 Total</b>	<b>52 SFR 1 Commercial multi-family 3 Mixed-use 11 Demo 1 Cancelled</b>	<b>9 SFR 1 Demo 2 Cancelled</b>	<b>211 SFR 55 Demo 2 Expired 4 Cancelled</b>	<b>352: (272 SFR) (67 demo) (1 Comm. multi-family) (3 Mixed-use) (7 Cancelled) (2 Expired)</b>	<b>1,107 -1,078 = 29</b>	<b>5,395- 5,220 = 175</b>

Source: County permit and OFM population data

\* Includes all finalized owner/builder permits, manufactured homes, park model homes and modular units.

Seven years is a small sample and any conclusions should be treated with caution. Typically, changes in employment options are linked with changes in population and corresponding expansions or contractions in the numbers and types of residential developments. As Table 2 clearly demonstrates, in San Juan County, residential development and population growth are not synonymous.

The permit data for Orcas Island reveals that the number of new residences exceeds the number of new residents. OFM data indicates that between 2010 and 2016 the population of Orcas Island outside the subarea increased by approximately 146 people and the permit data shows that, during the same time period, 220 single family residences were permitted. This is approximately 1.5 housing units per new resident or, based on the average household size of 2.05, seventy-two new households and 148 vacant units. Conversely, if each of the newly permitted residences were occupied by an average household, 220 single family residential units would indicate a population increase of 449 new Island residents.

**Table 3. Summary of New Residents and Residences for Orcas Island and Eastsound UGA.**

	<b>New Residents 2010-2016</b>	<b>New SFRs 2010- 2016 (not including mixed use and multi units)</b>	<b>Rate of SFRs per new resident</b>	<b>SFR's per average household (2.05)</b>
Orcas Island (outside UGA)	175-29 = 146	220	1.5	3.09 SFR's per household
Eastsound UGA	29	52	1.79	3.71 SFR's per household

Source: County permit and OFM population data.

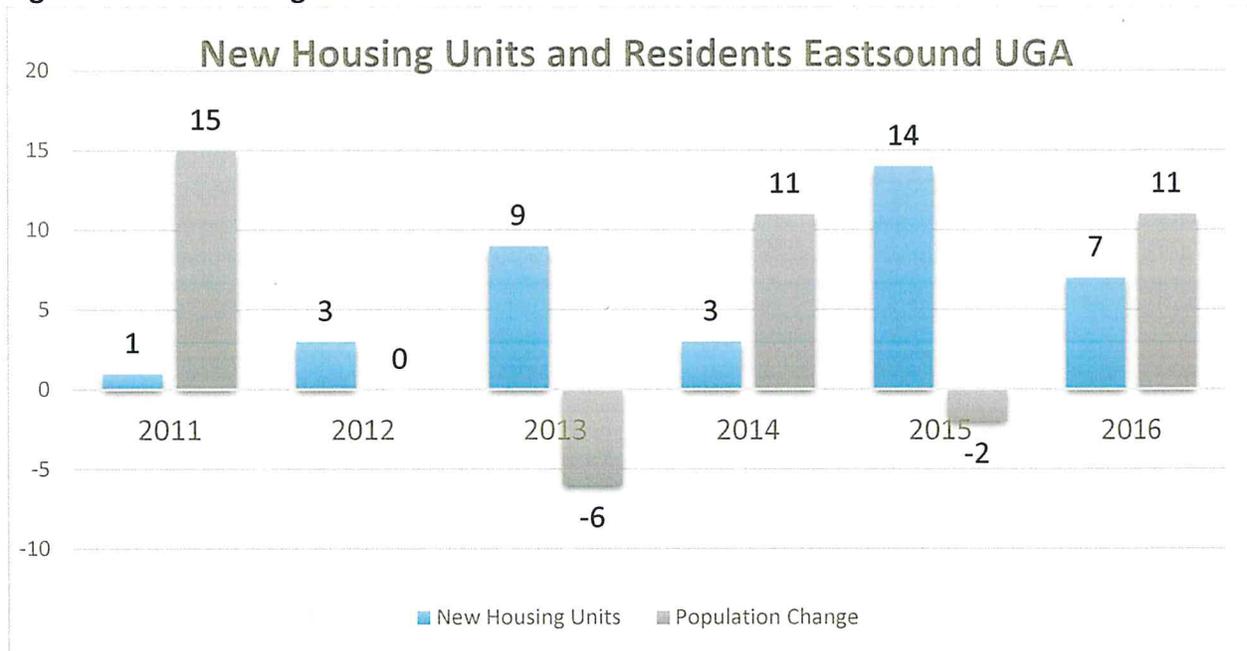
The discrepancy between the number of new residents and new residences is more intense in Eastsound UGA than the rest of the island. Between 2010 and 2016, the population of the UGA increased by twenty nine residents. Over the same period, fifty-two residential permits were issued in the UGA. This is 1.79 residential units per new resident or almost four residential units per new household. If each of the new residential units housed an average household, then the population increase would be approximately seventy-five residents rather than twenty-nine.

Residential development on Orcas Island occurred outside of the Eastsound UGA at a ratio of 4:1, a clear indication of people's preference for non-UGA locations. The projected population increase for the entire island, based on maintaining a 0.23 percent share of the State's population, between 2016 and 2036 is 1,038.

According to the Census, the County has an overall vacancy rate of 42.8 percent (this includes all the different categories of vacancy). Unfortunately, data is not available to determine whether the vacancy rate in the Eastsound UGA is substantially different from other areas on

Orcas Island. Anecdotal evidence and the slow increase in the number of multi-unit developments suggests that occupancy rates are higher in the UGA than elsewhere.

**Figure 1. New Housing Units and Residents Eastsound UGA.**



Source: OFM data and County permit data.

Table 2 shows that between 2010 and 2016, Eastsound UGA accounted for approximately nineteen percent of single family residential and 100 percent of commercial multi-family and mixed-use development on Orcas Island.

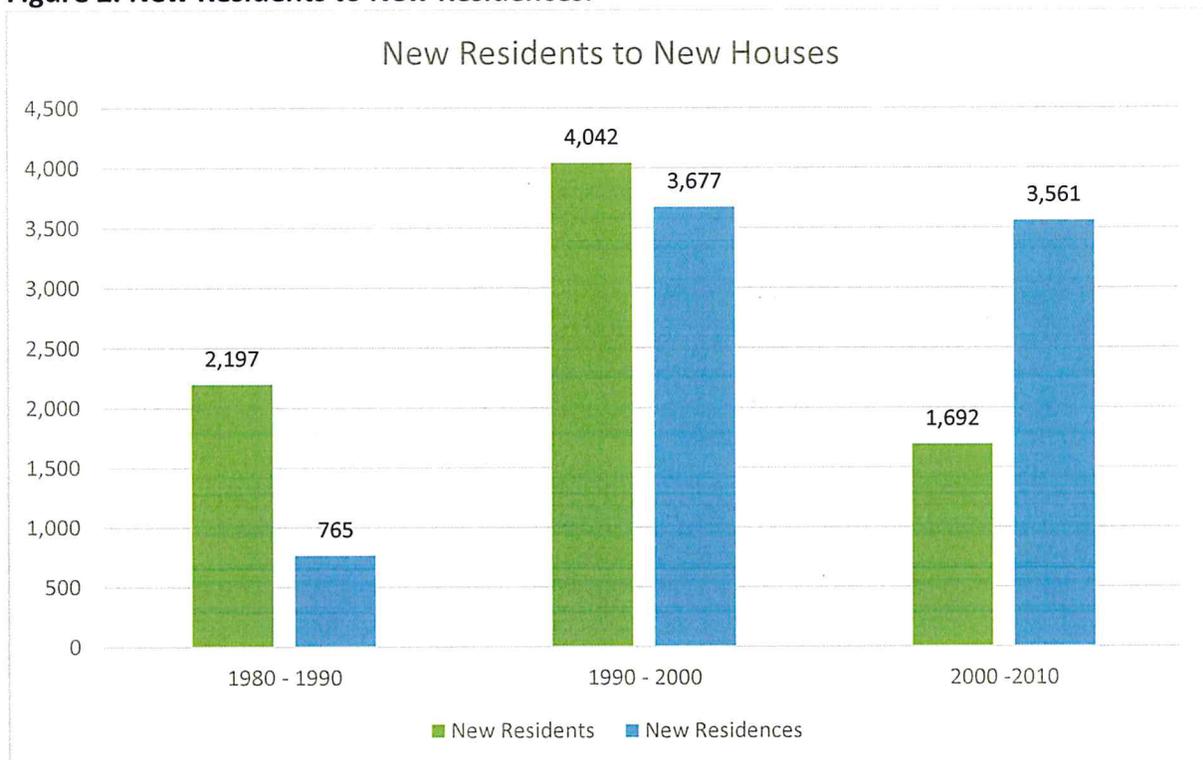
Staff’s April 11, 2017, Technical Memorandum’s compounded proportionate share projection for Eastsound indicates that Eastsound’s population is expected to reach 1,594 in 2036, an increase of 487 people over the current population. Eastsound’s population grew by 252 in the sixteen years between 2000 and 2016. The decade between 2005 and 2015 was marked by the Great Recession and consequent decline in net migration into the County, partially explaining the UGA’s limited growth. The OFM suggests that the Great Recession postponed the previously projected population growth by a minimum of five years. A statement, that, if accurate, indicates intensified growth across the planning period. Section 1 (F) of Appendix 1, page 8 of the current Comprehensive Plan forecasts an Eastsound population of 1,806 in 2020, a projection for three years from now that is 212 people higher than the 2036 projection, nineteen years distant. The compounded proportionate share projection is within the parameter adopted by the County in 2005.

Assuming that existing residential units are at maximum capacity, the projected 487 new residents will need approximately 238 new units (487/2.05). To achieve this, an average of twelve new residential units per year would need to be constructed. The construction rate for single family residences inside the UGA between 2010 and 2016 was six units per year.

If the current development pattern, of 1.79 units per new resident, continues into the future it is possible that an increase of 487 people would generate approximately 871 new residential units (487 x 1.79).

In San Juan County recently it has been difficult to discern the relationship between housing development and population growth. In the decade between 2000 and 2010 the number of residential units increased by 3,561 while the population grew by 1,692. This is equal to 2.1 residential units per every new resident.

**Figure 2. New Residents to New Residences.**



Source: U.S. Census

It is clear that the primary driver of residential development in San Juan County is not population pressure. The recent permit data for Orcas Island and Eastsound provides a mixed message within a limited context. On one hand, residential development is occurring at a pace that will provide sufficient residential units for the projected new residents, while on the other hand, the rate of residential development on Orcas Island far exceeds the speed at which new residents arrive.

The 2000-2010 ratio of new residents to residences (1:2.10) is higher but consistent with the ratio of occupied to unoccupied units discussed on page 35 of the April 11, 2017 Technical Memorandum, (7,899 occupied units out of a total of 13,859 is a ratio of 1:1.75).

**B. Development in Lopez Village UGA and Lopez Island**

Table 4 provides a comparison between the number of finalized permits on Lopez Island and the number of new residents

**Table 4. Residential Permits of Lopez Island and Lopez Village UGA**

Year	Lopez Village Urban Growth Area		Total Permits	Population	
	Yes	No		Lopez Village	Lopez Island
2010		27 Single Family Residence* 5 Demolition (Demo)	32	165	2,380
2011		23 SFR 7 Demo	30	165	NA
2012	4 SFR	22 SFR 1 Demo	27	164	NA
2013		17 SFR 1 Demo	18	168	NA
2014	3 SFR	24 SFR 2 Demos 1 Mixed-use	30	169	NA
2015		34 SFR	34	171	NA
2016		23 SFR 5 Demo	28	171	2,466
<b>2010-2016 Total</b>	<b>7 SFR</b>	<b>170 SFR 21 Demo 1 Mixed-use</b>	<b>199</b>	<b>171-165 = 6</b>	<b>2,466-2,380 = 86</b>

Source: County permit and OFM population data.

\* Includes all finalized owner/builder permits, manufactured homes, park model homes and modular units.

Seven years is a small sample and any conclusions drawn upon it should be treated with caution.

Between 2010 and 2016, the population of Lopez Island Village increased by six residents, whereas at the same time, the population of the rest of Lopez Island increased by eighty residents. Lopez Village population growth has been at a rate of approximately one person per year whereas the population growth for the rest of the island has been at a rate of about thirteen people per year. Over the same period, seven SFR permits were issued for new residences in Lopez Village and 170 SFR permits were issued for Lopez Island beyond the UGA. The permit data for Lopez Island reveals that for every new resident on the island, more than two houses are constructed.

**Table 5. Summary of new residents and residences for Lopez Island and Lopez Village UGA**

	<b>New Residents 2010-2016</b>	<b>New SFRs 2010- 2016</b>	<b>Rate of SFRs per new resident</b>	<b>SFR's per average household (2.05)</b>
Lopez Island (outside UGA)	80	170	2.12	4.35 SFR's per household
Lopez Village	6	7	1.16	2.33 SFR's per household

Source: County permit and OFM population data.

The proportionate share projection for Lopez Village UGA is 204 people in 2036, an increase of thirty-three people or sixteen residential units. The current rate of population growth of approximately one person per year suggests that by 2036, the population in Lopez Village will be 191.

The recent permit data for Lopez Village indicates an almost 1:1 connection between residential development and new residents. The residential development pattern across the rest of the island, of 2.12 new units per new resident, suggests that future residential development in Lopez Village may follow the same trend.

At the time of writing, there are plans to revive a long subdivision in Lopez Village. This development has the potential to generate up to twenty-eight new units. Due to the size of the UGA, it is possible that a few large developments could account for the entire population allocation for Lopez Island.

If, in the future, it's clear that population growth in Lopez Village is occurring at a higher rate than expected, the County may revise its population projection for Lopez Village by attributing a higher percentage of the Island's population growth to the UGA.

Once the land capacity analysis is complete, the Department will have a better idea of the type and location of future development and growth.