POPULATION AND HOUSING ESTIMATES METHODOLOGY

INTRODUCTION

Each year the Planning Commission prepares population and housing unit estimates for Unincorporated Hillsborough County and the cities of Temple Terrace, Plant City and Tampa. These estimates are prepared at the Census Tract level and then aggregated into the correct jurisdiction. Analysis at the Census Tract level allows other agencies and the general public to identify geographic areas which are either adding or losing housing units and, concomitantly, adding or losing people.

THE HOUSING UNIT METHOD

The Planning Commission utilizes the Housing Unit method to calculate population estimates. The housing unit method is a demographically sound and professionally recognized model to calculate small area population estimates. It is one of the most commonly used models and requires only housing (in this case permit) data to generate population estimates. This methodology rests on the assumption that residents of Hillsborough County occupy a specific housing type. Our analysis identifies the following housing types that are tracked.

Table 1: Housing Types

Single Family Detached (SFD)	A typical, single-family residential house.
Single Family Attached (SFA)	To include condominiums, townhomes and duplexes.
Mobile Home (MH)	To include mobile homes and mobile home spaces.
Apartments (APT)	To include all apartment complexes.
Group Quarters (GQ)	To include student dormitories, assisted living facilities, prisons, jails and military barracks.

The Housing Unit Method relies on a formula to estimate population:
$$P_t = [(H_t * O_t * PPH_t)] + GQ_t$$
Where

P_t = population at time t,

H_t = number of housing units at time t,

O_t = housing unit occupancy rate at time t,

PPH_t = persons per household at time t,

GQ_t = group quarters population at time t,

With the release of the 2010 Decennial Census data, staff had available fresh baseline data from which to begin generating the next set of estimates. Since the 2010 Census provides values for all four variables, the first step in using 2010 Census Data was to subtract Group

Quarter population from the total population in each tract to create a household population table. The household population table will constitute the baseline population which will either be added to, or subtracted from, once variable H_t is determined.

DETERMINING H_t

Planning Commission staff receives Permit and Certificate of Occupancy (CO) Data from each jurisdiction on a quarterly basis. The Permit data is analyzed to identify new units permitted (see Table 1 for types of units) as well as identifying all residential demolitions. After all four quarters of residential Permits are analyzed, the Permits are reconciled against the COs issued for the estimate year (estimates are dated to April 1 so the time of analysis spans April 1 to March 30).

There are a number of quality control issues undertaken in this reconciliation process, some of the items considered are:

1. Are there COs issued without originating Permits?
2. Are there Permits without COs?
3. Have all demolitions been accounted?
4. Have any new group quarters been constructed, and if so, the number of residents?

Once all new residential units and demolitions have been accounted for, the results are appended to the previous year's records to create a Master Estimate database (MEst). Since 2011 was the first year of population estimates, there were no new estimates against which to append. Beginning in 2012 and continuing thereafter, new records will continue to be appended.

The net change for the year constitutes H_t and these values are entered into the database at the Census Tract level. The data is summed and added to the 2010 Census Household Population to create a new housing inventory.

ADJUSTMENTS

There are three key crucial adjustments to make before the final estimates are released. First, the group quarter population is double-checked and when needed, institutions which have large, known, well-defined group quarter populations are contacted for the estimate dated on or near April 1 of the year in question. Second, adjustments are made to account for any annexations made over the past year. Third, new apartments totaling 50 units or more are flagged in the database and assigned a maximum occupancy rate of 60 percent for the first year. Any remaining occupancy is applied to the following year.

FINAL ESTIMATES

Final estimates are calculated by multiplying the new housing inventory by the 2010 Census *Occupancy Rate* and *Persons Per Household (PPH).* These rates will be held constant until such time as Planning Commission staff can augment these numbers to capture any future trends. It should be noted that between the 1970 Census and 1990 Census, the PPH for the entire county and the jurisdictions showed a decline. The 2000 Census seemed to indicate the decline in PPH had stopped and 2010 Census shows an increase in PPH. Whether this reversal in PPH is temporary due to the economic slowdown or indicative of long range trends remains to be seen. Planning Commission staff is currently researching alternative sources to better forecast and adjust the PPH. However, staff assumes the occupancy rate and pph as reported by the 2010 Census at the tract level to be the current rate, and they are used accordingly.

Table 2: Persons per Household by Decennial Census

	1970	1980	1990	2000	2010
Hillsborough County	3.0	2.87	2.51	2.51	2.55
City of Tampa	2.7	2.68	2.35	2.36	2.38
City of Temple Terrace	3.4	3.03	2.52	2.36	2.39
City of Plant City	3.0	2.77	2.67	2.73	2.82

As a reminder to the end user, these numbers are estimates. Planning Commission staff follows the convention in rounding numbers to the nearest "ten" to eliminate any confusion that these numbers are *hard count* data.