Overview of City, Town, and County Annual Estimation Process

This document provides a summary of the Office of Financial Management's (OFM) annual April 1 population estimates development. The following sections cover statute responsibilities, population estimation methods, data sources, and the April 1 estimates schedule.

History and Statute Responsibilities

The Office of Financial Management is charged with developing accurate and fair population estimates for the allocation of state revenues and program administration.

Washington has been preparing annual population estimates for cities and towns for revenue allocation purposes since the 1940s. The population estimate, census, and annexation functions were initially the responsibility of the Washington State Census Board at the University of Washington. The functions were transferred to Olympia in 1967 with the establishment of the Planning and Community Affairs Agency and subsequently transferred to OFM. The responsibility for preparing county population estimates and formal liaison activities with the federal Bureau of the Census were added in the 1970s. Basic statutes supporting the program are RCW 43.62.020 and RCW 36.13.100.

Population Estimate Definitions and Methods

The population estimates are developed as accurately as possible from standard and tested methods. The population figures represent the *resident population* of an area as defined by the federal Census Bureau. *The figures include all persons usually residing in an area including military personnel and dependents, persons living in correctional institutions, and persons living in nursing homes or other care facilities. College students are considered residents of the place where they live while attending school. Seasonal populations, such as vacationers or migrant farm workers, are considered residents of the place they consider their usual residence. Persons with no usual residence are counted where they are on April 1.*

The specific procedures used to develop the population estimates depend on the availability of data. Two important factors determining the availability of data for an area are *(1) the political boundary of the population being estimated, and (2) the length of period between the estimate date (April 1) and the time the population figures are made final.*

>   ?? **Political boundary of the estimate area**. Many administrative data sets relating to population change are available for states and counties. These include vital statistics, voter and automobile registrations, employment, Medicare, and others. Estimation data for cities are very limited. The data may only be available for cities larger than a given size, and are not timely. Often the city data may not reflect boundary changes due to annexation. *The housing data collected each year from local governments by OFM is the primary data supporting the city and town population estimates.*

?? **Length of period between the estimate date (April 1) and the time the population figures must be final.** A short interval between the estimate date (April 1) and the filing of final numbers eliminates many possible data sets at the state, county and city level. The length of the interval reflects a trade-off between timeliness and accuracy. Most federal or state administrative data sets require a lengthy collection and reporting process. For example, average annual covered employment has a 1 to 1 ½ year lag in reporting. Such lags make these data "out of step" with more current indicators. Medicare and vital statistics data, used at the county level have a 1-year or 2-year lag, but are relatively stable data and can be reliably estimated to match the estimate date.

OFM has a three-month interval between the April 1 estimate and the time the population figures must be finalized. Most state and federal agencies currently preparing estimates have a six-month interval. The federal Census Bureau used to have an eight-month to one-year interval between the estimate date and release of the estimates. For OFM, the data must be collected and the estimates developed between April 1 and the first week in June—when they are released for local review. This shortens the interval further.

The estimation procedures used by OFM are listed and briefly described in Table 1. The operational steps showing the relationship between the state, county, and city/town estimates are shown next.

Step 1. The State level population estimate is developed from

(a) Component Method II, and

(b) Composite Method.

Step 2. The County level population estimates are developed from

(a) Component Method II, and

(b) Ratio Correlation. The state total developed in Step 1 is used in Ratio Correlation.

Step 3. County unincorporated area population estimates, and city estimates, and county total populations are developed by the Housing Unit method in a three-part process.

(a) Housing unit population estimates are developed for the unincorporated part of each county from the housing data obtained from county planning and building departments. Household size is adjusted from the county household size model.

(b) Housing unit population estimates are developed for the cities and towns in each county from the housing data furnished by the cities. Supplemental sets of data are used to adjust city occupancy and household size. Some cities conduct an actual count.

(c) The total population for each county based on housing change is obtained by adding the unincorporated area population developed in Step 3 (a) to the sum of the population of the cities in each county developed in Step 3 (b).

Step 4. Final county total populations are developed by averaging the populations resulting from Step 2 (a), Step 2 (b), and Step 3 (c). *That is, the Component Method, Ratio Correlation, and the Housing Unit Method. These combined estimates are considered more accurate than any single estimate based on a single indicator of change—such as housing.*

This final county total serves as a "lid" on the county population. Since housing change usually tends to lead or lag actual population growth—city estimates, developed from only housing data, may begin to consume the population in the unincorporated area if occupancies and/or household sizes are not adjusted.

Table 1
Population Estimation Procedures Used by the Office of Financial Management

Method	Description	Comments	Used for:
1. Component Method II	Population change since the last census is determined by births, less deaths, plus migration estimated from school-age migration. Population age 65 years and over is estimated separately from Medicare data	Translation of school-age migration to reflect migration of population 64 years and under is based prior decade relationships	State Counties
2. Ratio Correlation	*This method distributes an existing state level population estimate to counties.* The procedure relates change in the county's share of the state population over the last decade to changes in the county's share of a set of symptomatic data over the same period. Changes in the county's share of the symptomatic data are then tracked over to following decade to develop population change. Current variables in the equation are school enrollment, voter and automobile registrations, out-of-state driver's licenses, and natural increase.		Counties
3. Housing Unit Method	Change in population estimated from change in housing since last census. Average person per house (PPH) and occupancy rates applied to updated housing by type of housing (i.e., single family, duplexes, 3-4 Unit Structures, 5-or more Unit structures). Population in Group Quarters facilities such as prisons, mental hospitals, and nursing homes, is estimated separately and added to the household population for the area total.	Accuracy is very dependent on current PPH and occupancy factors, which are difficult to update from the last census. Small changes in PPH or occupancy assumptions have a large impact on population estimates for large areas.	State Unincorporated area of Counties Cities and Towns
4. Special Census 7/17/00 OFM	Local government conducts actual enumeration of the population for their April 1 population determination.	Census conducted in accord with OFM requirements	Primarily done by smaller cities and towns.

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Figure 1
Annual Population Change from Different Estimates Official Statewide Estimates by OFM and Census Bureau, and the Housing Unit Method*
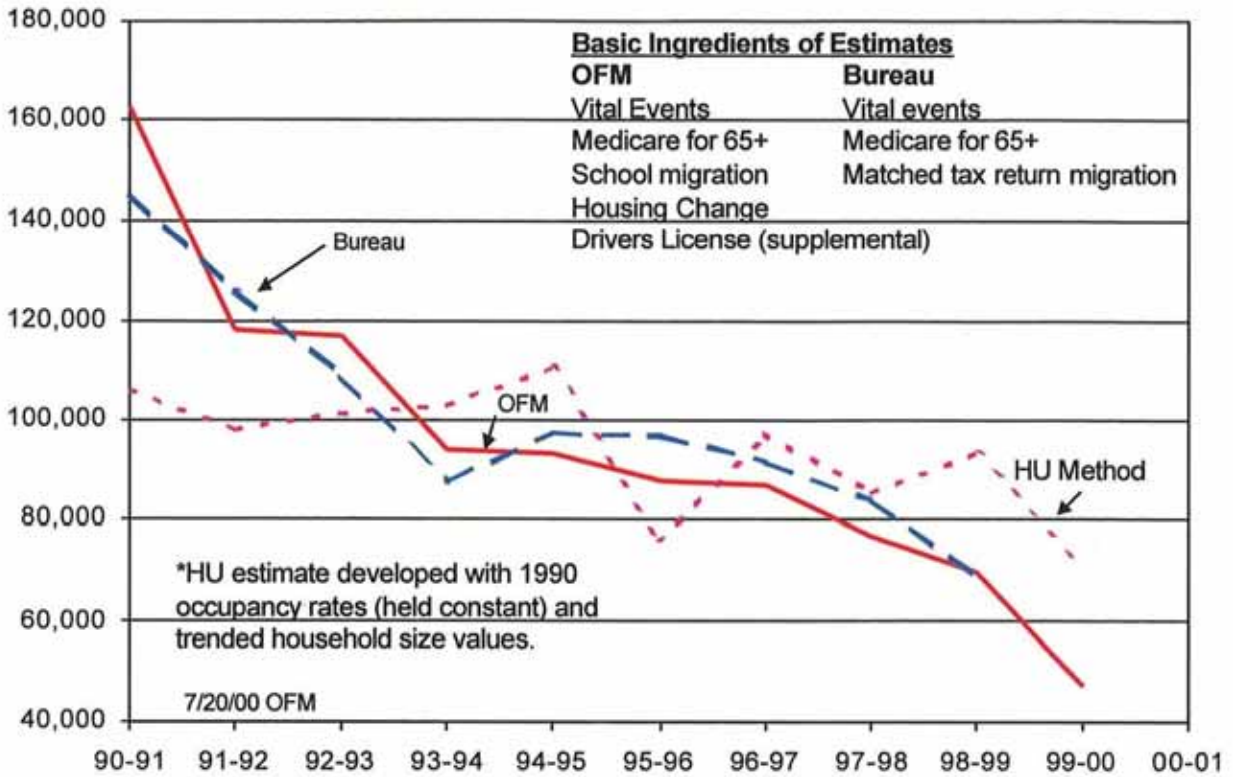
The graph (Figure 1) shows, at the state level, how the Housing Unit Population Estimates can be "out of step" with the combined estimates from other procedures.

Step 5. Adjusting the city populations to balance the unincorporated and incorporated populations in each county.

(a) Subtract the city populations (total incorporated population) from final county total population developed in Step 4 to obtain a "residual population estimate for the unincorporated area of each county."

(b) Compare the "residual" population in the unincorporated area from Step 5 (a) to results of Step 3 (a), the housing unit population estimate for the unincorporated part of each county developed from the housing data. A 1 to 1.5 percent variance is usually acceptable, sometimes more, depending on the circumstances.

(c) Adjustments are made to the city estimates in each county if the variance is too large.

Okanogan County is provided as an example in development of the county population estimates.

Developing Okanogan County Total:

		Total County
1.	Step 2 (a) Estimate from Component Method II	39,216
2.	Step 2 (b) Estimate from Ratio Correlation	38,077
3.	Step 3 (a) Unincorporated H.U. Method (22,651)	
4.	Step 3 (b) Incorporated places H.U. Method (15,639)	
5.	Step 3 (c) County total H.U. Method	38,290
6.	Step 4 Final County Population: Average of CMII, Ratio Corr. & H.U.	**38,527**

Balancing Incorporated and Unincorporated Population:

1.	Step 5 (a) "Residual population for unincorporated area is the County total of 38,500 (rounded) less city populations (15,639)	22,861
2.	Step 3 (a) Unincorporated area population from H. U. Method	22,651
3.	Difference	210

The initial difference for Okanogan was well within tolerance. When the actual census for Tonasket was edited the difference was slightly smaller.

Table 2
Annual Population Estimates Schedule, Office of Financial Management

Dates	Activity
January	Cities and towns are asked whether they *intend to estimate* their population for the current year or conduct an actual enumeration (Form E). An enumeration is usually too costly for larger Cities.
February 19-20th (about)	Census Administrator Training. Census forms sent to cities intending to census over the next two weeks.
February 28	*Filing of 2nd Quarter's annexations to be included in the current year's April 1 population. All these annexations are presently added to the prior year's population for fund allocations.*
March 1-15	Census Enumerator Training various locations statewide.
March 15	City censuses start. Form A housing data collection forms and Form C census forms sent to local governments. Other data collection requests go to many state and federal agencies.
April 1	*Final date annexations can be approved and certified by OFM to be counted in current year's April 1 population.*
April 10th (about)	Census Results and Form A Data due at OFM
April 10th through June 10th (about)	Estimate development in progress.
May 31st	*Filing of 3rd Quarter's annexations. All these annexations are presently added to the prior year's population for fund allocation. Only those approved April 1 or prior will be included in the current year's April 1 population.*
June 11th (about)	Current April 1 Population Estimates released for local review
June 30	*Current April 1 Population Estimates filed with the Office of the Secretary of State and Office of the State Treasurer*
August 31	*Filing of 4th Quarter's annexations. All these annexations are presently added to the prior year's population for fund allocations.*
November 31	*Filing of 1st Quarter's annexations. These are the Current year's April 1 population, plus annexations approved from April 2 through November 31.*
7/17/00 OFM	