

Data and Methods Used in Producing the 2014 Population Estimates in Texas

Texas Demography
Conference

May 18, 2016

Austin, Texas



@TexasDemography



We produce annual estimates of...

- **the total populations of counties**
- **the total populations of places**
- **county populations by age, sex and race/ethnicity**



You can access the data from our website
(<http://demographics.texas.gov>)

- Download CSV/PDF files or use Population Estimate

TEXAS DEMOGRAPHIC CENTER @texasdemography
LLOYD POTTER State Demographer

Home > Data > TPEPP > Population Estimates

Tx Pop. Estimates & Projections | Census 2010 | Census 2000 | Census 1990 | Descriptive Tables

Program Overview | Population Estimates | Population Projections | Estimates Survey FAQ

Texas Population Estimates Program

The Texas Population Estimates Program produces annual estimates of the total populations of counties and places in the state and estimates of county populations by age, sex, and race/ethnicity.

NOTE: For population estimates for 2001-2009, please see: <http://www.census.gov/popest/data/intercensal/index.html>

Population Estimate Methodology per Year (PDF)

Total Population	2014	2013	2012	2011
Age, Sex, and Race/Ethnicity	2014	2013	2012	2011

Data Download

Population Estimates Tool
Online tool provides access to searchable estimates information for viewing and downloading.

CSV Files: Contain Population Estimates Data only in a Comma Delimited file format
PDF Files: Contain Methodology and formatted data tables.

Population Estimates

	2014	2013	2012	2011
Total Population By County	[CSV] [PDF]	[CSV] [PDF]	[CSV] [PDF]	[CSV] [PDF]
Total Population By Place	[CSV] [PDF]	[CSV] [PDF]	[CSV] [PDF]	[CSV] [PDF]
Total Population By Metropolitan Statistical Area	[CSV] [PDF]	[CSV] [PDF]	[CSV] [PDF]	[CSV] [PDF]
Total Population By Council of Governments	[CSV] [PDF]	[CSV] [PDF]	[CSV] [PDF]	[CSV] [PDF]
Age, Sex, and Race/Ethnicity for State and Counties	[CSV] [PDF]	[CSV] [PDF]	[CSV] [PDF]	[CSV] [PDF]



We collect ...

- SURVEY data – private schools, annexation and boundary changes, and building permits ...
- ADMINISTRATIVE data – vital statistics, voter registration, vehicle registration, nursing homes, medicare, prison and correctional facilities ...
- Public data – decennial census, ACS ...



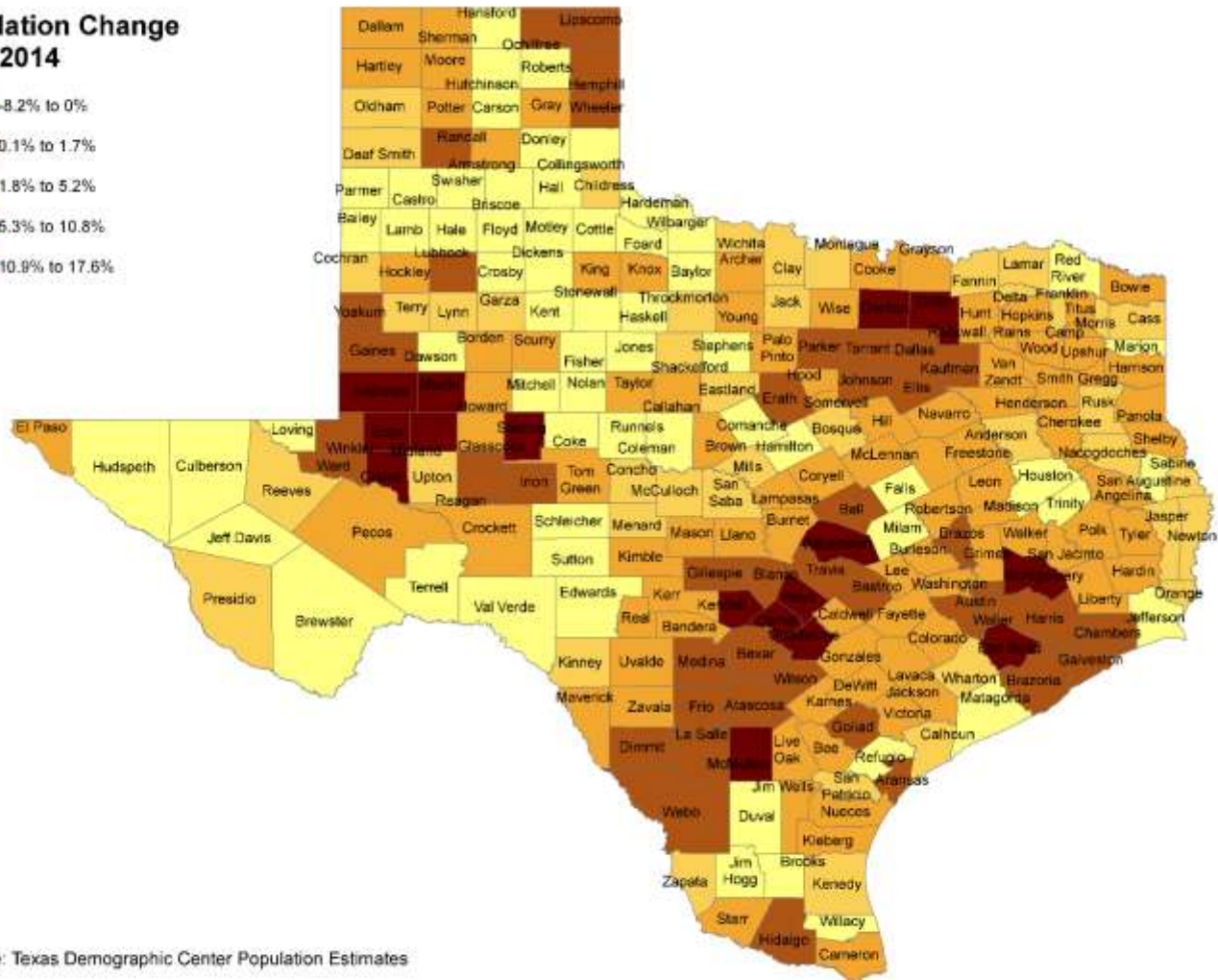
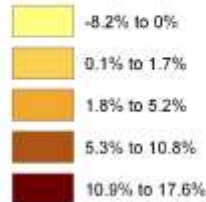
The methodology we used ...

- Top down
 - County population estimates are controlled to the state estimates and place estimates are controlled to the county estimates
- Three methods for the county and place totals
 - Cohort component II
 - Housing Unit
 - Ratio Correlation
- “Projected” age-sex-race distribution applied to county total to obtain estimates with demographic details.



Estimated Percent Change of the Total Population by County, Texas, 2010 to 2014

Population Change 2010-2014



Source: Texas Demographic Center Population Estimates



Methodology for County and Place Total Estimates

➤ Cohort Component II

- $P(t+k) = P_t + B - D + NetM$
- *Use school enrollment data and Medicare data to calculate net migration*

➤ Housing Unit

- *Use number of new building permits, type of units, demolition, occupancy rate to estimate population*

➤ Ratio Correlation

- *Use variables of births, deaths, school enrollment, vehicle registration and voter registration*
- *Regression models are used to estimate population*



The 2014 Place Total Population Estimates (Top 10)

Place	Estimated Population July, 2014	2010-2014 Numeric Change	Place	Estimated Population July, 2014	2010-2014 Percent Change
Houston	2,247,167	146,904	Fulshear	3,393	199.2
Austin	892,943	102,452	Escobares	2,418	103.5
San Antonio	1,428,340	100,933	DISH	353	75.6
Dallas	1,277,995	80,179	Buda	12,022	64.8
Fort Worth	809,062	67,856	Bee Cave	6,094	55.3
Frisco	144,936	27,947	Manvel	7,438	43.6
El Paso	675,308	26,187	Prosper	13,484	43.1
McKinney	152,838	21,721	McLendon-Chisholm	1,954	42.3
Laredo	255,428	19,337	Selma	7,834	41.4
Plano	277,671	17,830	Manor	6,996	38.9



The 2014 Population Estimates by Age, Sex and Race/Ethnicity

- **“Project” the age and sex distributions for NH White, NH Black, Hispanics and Other using cohort survival model and apply to the total county population estimates**
 - BASE POPULATION: 2010 Census population
 - NEW COHORT ages 0 to 3: vital statistics data with adjusted race distribution
 - 2009-2011 rates of MORTALITY
 - 2000-2010 NET MIGRATION for each cohort



The 2014 Population Estimates by Age, Sex and Race/Ethnicity

Compare birth data with 0-year-olds in Census 2010

Vital Statistics (Mother's race)						0-Year-olds, 2010 Census					
Year	NH White	NH Black	Hispanic	Other	Total	Year	NH White	NH Black	Hispanic	Other	Total
2010	132,002	43,327	189,504	20,969	385,802	2010	118,888	41,869	194,215	24,874	379,846
2011						2011					
2012						2012					
2013						2013					
2014						2014					
Year	NH White	NH Black	Hispanic	Other		Year	NH White	NH Black	Hispanic	Other	
2010	34.2%	11.2%	49.1%	5.4%		2010	31.3%	11.0%	51.1%	6.5%	
2011						2011					
2012						2012					
2013						2013					
2014						2014					



The 2014 Population Estimates by Age, Sex and Race/Ethnicity

Issues with using unadjusted births

Vital Statistics (Mother's race)					Unadjusted Births						
Year	NH White	NH Black	Hispanic	Other	Total	Year	NH White	NH Black	Hispanic	Other	Total
2010	132,002	43,327	189,504	20,969	385,802	2010	118,888	41,869	194,215	24,874	379,846
2011	130,751	41,869	183,058	21,650	377,328	2011	130,751	41,869	183,058	21,650	377,328
2012	132,130	43,073	183,463	23,820	382,486	2012	132,130	43,073	183,463	23,820	382,486
2013	132,904	44,105	185,829	24,340	387,178	2013	132,904	44,105	185,829	24,340	387,178
2014	137,033	45,964	189,762	26,872	399,631	2014	137,033	45,964	189,762	26,872	399,631
Year	NH White	NH Black	Hispanic	Other		Year	NH White	NH Black	Hispanic	Other	
2010	34.2%	11.2%	49.1%	5.4%		2010	31.3%	11.0%	51.1%	6.5%	
2011	34.7%	11.1%	48.5%	5.7%		2011	34.7%	11.1%	48.5%	5.7%	
2012	34.5%	11.3%	48.0%	6.2%		2012	34.5%	11.3%	48.0%	6.2%	
2013	34.3%	11.4%	48.0%	6.3%		2013	34.3%	11.4%	48.0%	6.3%	
2014	34.3%	11.5%	47.5%	6.7%		2014	34.3%	11.5%	47.5%	6.7%	



The 2014 Population Estimates by Age, Sex and Race/Ethnicity

Adjusting race/ethnicity distributions

Vital Statistics (Mother's race)					Adjusted Births						
Year	NH White	NH Black	Hispanic	Other	Total	Year	NH White	NH Black	Hispanic	Other	Total
2010	132,002	43,327	189,504	20,969	385,802	2010	118,888	41,869	194,215	24,874	379,846
2011	130,751	41,869	183,058	21,650	377,328	2011	118,257	41,691	194,959	26,991	381,898
2012	132,130	43,073	183,463	23,820	382,486	2012	118,407	41,905	193,758	28,289	382,359
2013	132,904	44,105	185,829	24,340	387,178	2013	120,198	43,165	196,143	30,244	389,750
2014	137,033	45,964	189,762	26,872	399,631	2014	121,495	44,523	198,907	31,862	396,787
Year	NH White	NH Black	Hispanic	Other		Year	NH White	NH Black	Hispanic	Other	
2010	34.2%	11.2%	49.1%	5.4%		2010	31.3%	11.0%	51.1%	6.5%	
2011	34.7%	11.1%	48.5%	5.7%		2011	31.0%	10.9%	51.1%	7.1%	
2012	34.5%	11.3%	48.0%	6.2%		2012	31.0%	11.0%	50.7%	7.4%	
2013	34.3%	11.4%	48.0%	6.3%		2013	30.8%	11.1%	50.3%	7.8%	
2014	34.3%	11.5%	47.5%	6.7%		2014	30.6%	11.2%	50.1%	8.0%	



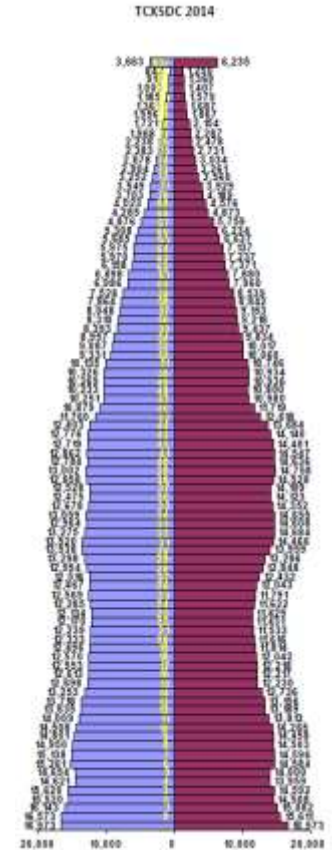
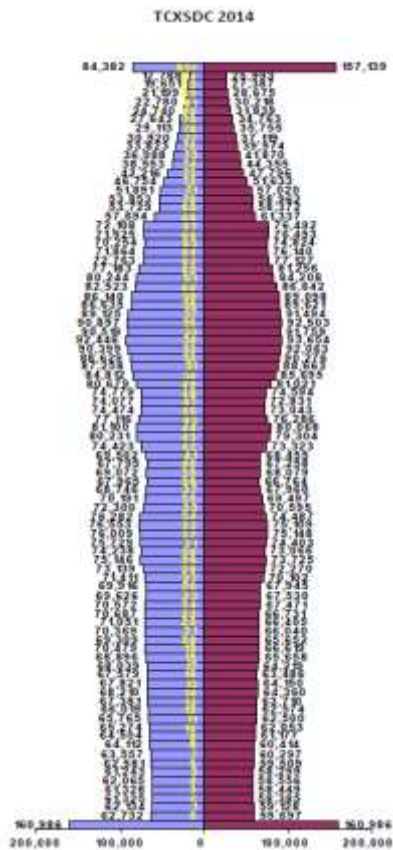
The 2014 Population Estimates by Age, Sex and Race/Ethnicity

NH White

NH Black

Hispanic

Other





Using the 2014 population estimates

- Due to the major revisions to the methodology, the 2014 estimated population by age/sex/race is not comparable to our previous years' estimates, especially for those under age 4
- Cautions should be taken in interpreting the estimates for small areas or small demographic groups; a larger geographic area and/or collapsing of age/sex/race groups are recommended



Looking into the future

- Making our estimates more timely
- Separation of the Asians from the Other race group
- Making year-to-year estimates more comparable



Questions and Feedbacks

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