The 2018 TDC State and County Population Projections

Helen You

Texas Demographic Conference
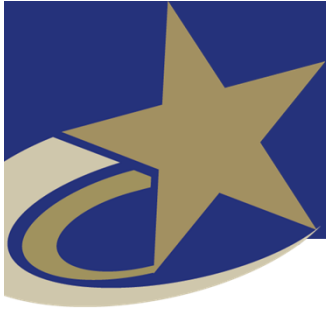
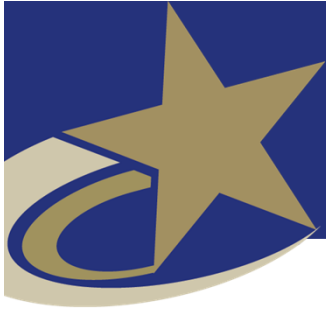**May 2018**

Austin, Texas

TEXAS DEMOGRAPHIC CENTER

@TexasDemography

Texas Population Projections Program

- TDC produces

  projections of the population of the **STATE** and all **COUNTIES** in the state by **age**, **sex** and **race/ethnicity**

- **The Cohort Component Model**

  ➢ $Population_{(t)} = Population_0$

  $$+ \text{ Natrual Increase}_t \text{ (Births}_t - \text{Deaths}_t)$$

  $$+ \text{ Net Migrants}_t \text{ (In-mig}_t - \text{Out-mig}_t)$$

  ➢ *The components of population change (fertility, mortality, and net migration) are projected separately for each birth cohort (persons born in a given year)*

TDC Population Projection Illustration

Population 2010 (Ages 0 to 95+)

-

DEATHS [= Base Population * Projected Death Rates]

+

NET MIGRANTS [= Base Population * Constant Migration Rates]

AGE +1

+
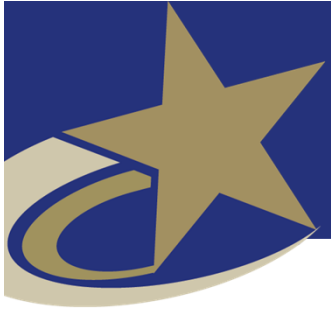
BIRTHS [= Women 15 -49 * Projected Fertility rates]

Projected Population for 2011

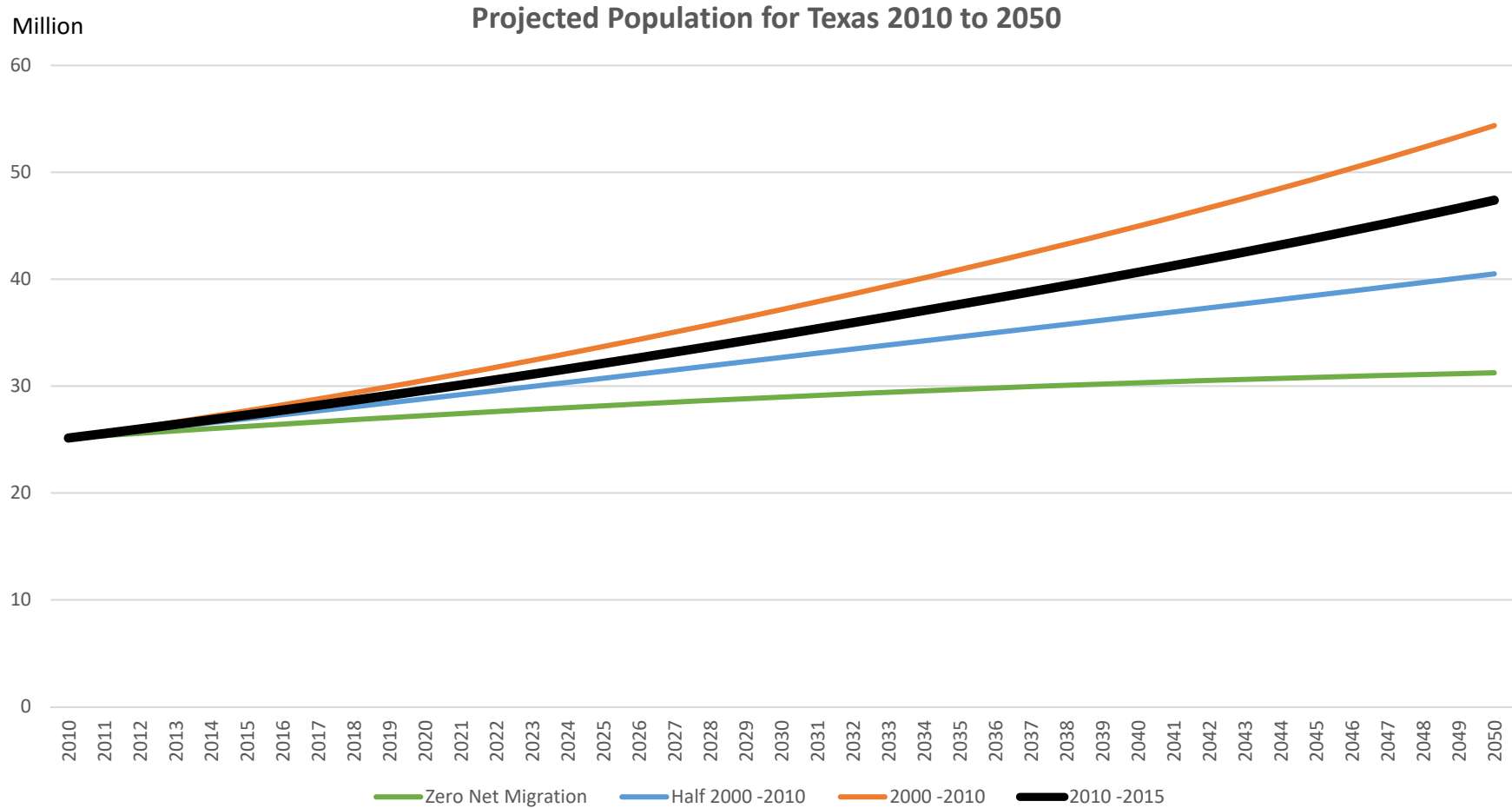(Base population for 2012 projection)

Changes in the 2018 Population Projections

- Current: single age for ages 0 to 85+

  New: single age for ages 0 to 95+

- Current: 4 race/ethnic groups – Non-Hispanic White, Non-Hispanic Black, Hispanics and Non-Hispanic Other

  New: 5 race/ethnic groups – separating Asians from Other (now includes Two or more Races, American Indian, Pacific Islander, and some other races)

- Current: 3 migration scenarios based on 2000 -2010 migration trends – 0, 0.5, 1.0

  New: an additional migration scenario based on 2010 – 2015 migration trends

- Current: projecting the race/ethnicity based on the mother's race

  New: an additional step to "re-allocate" a child's race/ethnicity

Preliminary Projection Results
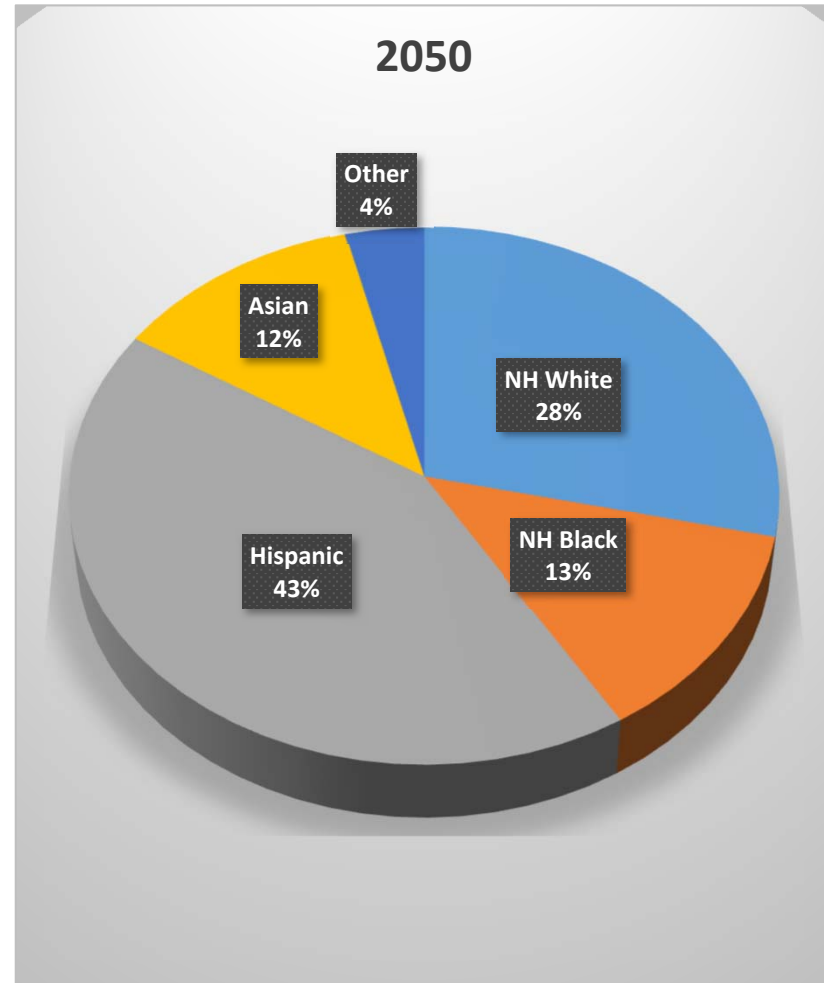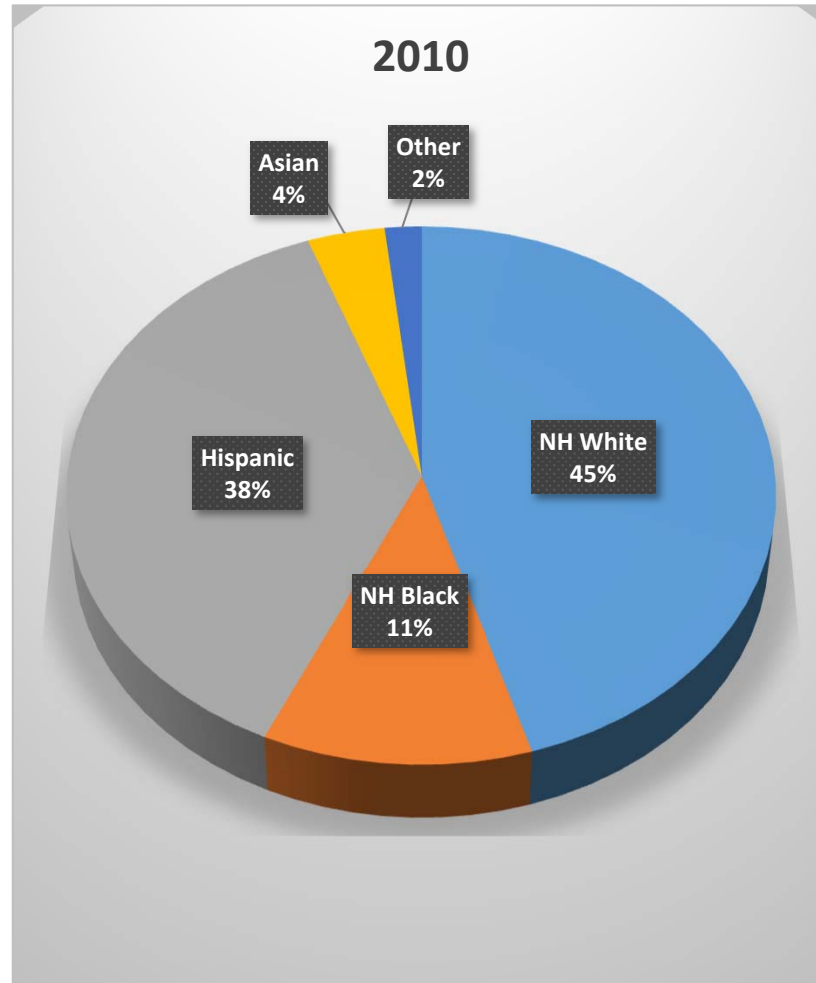

Projected Population for Texas 2010 to 2050

Race/Ethnic Composition

2010

- Asian 4%
- Other 2%
- Hispanic 38%
- NH White 45%
- NH Black 11%

2050

- Other 4%
- Asian 12%
- NH White 28%
- Hispanic 43%
- NH Black 13%

Age Composition

2010

Age	NH White	NH Black	Hispanic	Asian	Other	Total
00 - 04	5.4%	7.5%	10.3%	6.9%	13.1%	7.7%
05 - 09	5.6%	7.6%	10.0%	7.2%	11.5%	7.7%
10 - 14	5.8%	7.9%	9.3%	6.5%	10.4%	7.5%
15 - 19	6.1%	8.5%	8.9%	6.3%	9.1%	7.5%
20 - 24	6.3%	7.8%	8.2%	7.2%	7.6%	7.2%
25 - 29	6.6%	7.5%	8.2%	8.7%	7.1%	7.4%
30 - 34	6.1%	7.2%	7.8%	9.0%	6.4%	7.0%
35 - 39	6.4%	7.3%	7.5%	9.8%	5.9%	7.0%
40 - 44	6.7%	7.1%	6.6%	8.4%	5.3%	6.7%
45 - 49	7.8%	7.5%	5.9%	7.3%	5.5%	7.0%
50 - 54	8.1%	7.0%	4.9%	6.3%	5.1%	6.7%
55 - 59	7.3%	5.5%	3.8%	5.3%	4.2%	5.7%
60 - 64	6.4%	4.0%	2.9%	4.2%	3.2%	4.7%
65 - 69	4.9%	2.7%	1.9%	2.8%	2.1%	3.4%
70 - 74	3.6%	1.8%	1.4%	1.9%	1.4%	2.5%
75 - 79	2.9%	1.4%	1.0%	1.1%	0.9%	1.9%
80 - 84	2.1%	0.9%	0.7%	0.7%	0.6%	1.4%
85 - 89	1.3%	0.5%	0.4%	0.3%	0.3%	0.8%
90 - 94	0.5%	0.2%	0.1%	0.1%	0.1%	0.3%
95+	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**

2050

Age	NH White	NH Black	Hispanic	Asian	Other	Total
00 - 04	4.8%	5.9%	7.5%	5.7%	9.8%	6.4%
05 - 09	4.9%	5.9%	7.3%	5.7%	9.3%	6.3%
10 - 14	5.0%	5.9%	7.2%	5.6%	8.8%	6.3%
15 - 19	5.1%	6.1%	7.1%	5.7%	8.3%	6.3%
20 - 24	5.5%	6.5%	7.1%	6.6%	8.2%	6.6%
25 - 29	6.0%	6.9%	7.0%	7.6%	8.1%	6.8%
30 - 34	6.2%	7.1%	6.7%	8.1%	7.6%	6.8%
35 - 39	6.2%	7.0%	6.4%	8.3%	6.9%	6.7%
40 - 44	6.3%	7.1%	6.6%	7.8%	6.8%	6.7%
45 - 49	6.5%	6.9%	6.3%	7.5%	5.8%	6.5%
50 - 54	6.6%	6.7%	5.7%	6.4%	5.1%	6.2%
55 - 59	6.6%	6.7%	5.3%	5.5%	4.2%	5.8%
60 - 64	6.2%	5.4%	4.6%	4.8%	3.1%	5.1%
65 - 69	5.8%	4.4%	4.2%	4.2%	2.5%	4.6%
70 - 74	4.9%	3.6%	3.6%	3.3%	1.9%	3.9%
75 - 79	4.4%	3.0%	3.0%	2.9%	1.5%	3.3%
80 - 84	3.7%	2.2%	2.2%	2.0%	1.0%	2.5%
85 - 89	3.0%	1.6%	1.4%	1.3%	0.7%	1.8%
90 - 94	1.7%	0.8%	0.6%	0.7%	0.4%	1.0%
95+	**0.6%**	**0.3%**	**0.2%**	**0.4%**	**0.1%**	**0.4%**
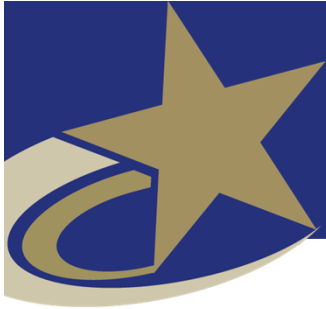
Age Composition-continued

- Changes from 2010 to 2050

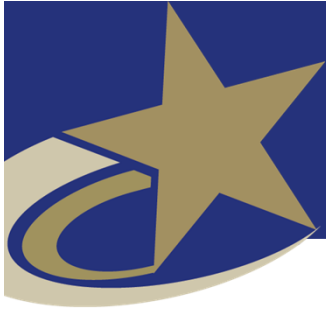| Age	NH White	NH Black	Hispanic	Asian	Other	Total
00 - 04	-0.6%	-1.6%	-2.8%	-1.2%	-3.3%	-1.3%
05 - 09	-0.7%	-1.7%	-2.7%	-1.5%	-2.1%	-1.3%
10 - 14	-0.8%	-1.9%	-2.2%	-0.9%	-1.6%	-1.2%
15 - 19	-1.0%	-2.4%	-1.8%	-0.6%	-0.9%	-1.2%
20 - 24	-0.7%	-1.3%	-1.1%	-0.6%	0.6%	-0.7%
25 - 29	-0.6%	-0.6%	-1.2%	-1.1%	0.9%	-0.6%
30 - 34	0.1%	-0.1%	-1.1%	-0.8%	1.2%	-0.2%
35 - 39	-0.1%	-0.3%	-1.1%	-1.4%	1.0%	-0.3%
40 - 44	-0.4%	0.0%	0.0%	-0.6%	1.6%	0.0%
45 - 49	-1.4%	-0.6%	0.4%	0.2%	0.2%	-0.5%
50 - 54	-1.5%	-0.3%	0.8%	0.1%	-0.1%	-0.5%
55 - 59	-0.7%	1.2%	1.5%	0.1%	0.0%	0.2%
60 - 64	-0.3%	1.3%	1.7%	0.6%	-0.1%	0.4%
65 - 69	0.9%	1.8%	2.3%	1.5%	0.3%	1.2%
70 - 74	1.3%	1.8%	2.2%	1.4%	0.5%	1.4%
75 - 79	1.5%	1.6%	2.0%	1.7%	0.6%	1.4%
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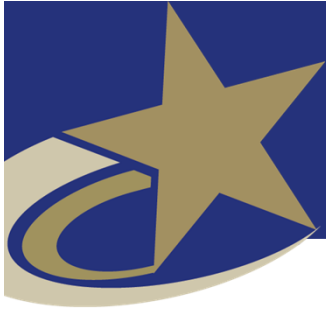
County Projections

- Deaths
  - ➢ Projecting age-sex-race specific **mortality/survival rates**

- Net Migrants
  - ➢ Calculating **migration rates** 2010-2015 for each county
  - ➢ For smaller population groups (NHB, NHA, Other), collapse age groups

- Births
  - ➢ Projecting age – race specific **fertility rates** for women at risk (female 15 to 49) by rural/urban status
  - ➢ Projecting race of the newborns

- "Special" Population
  - ➢ Group quarter population, college and military population
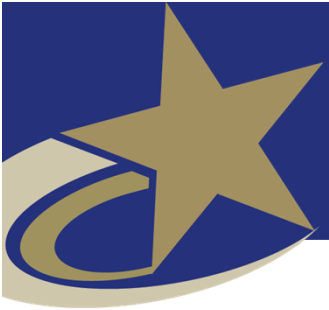
Projecting Fertility Rates

Asian ASFR (Age-specific-fertility rate) by Rural_Urban Status
Texas, 2009-2011
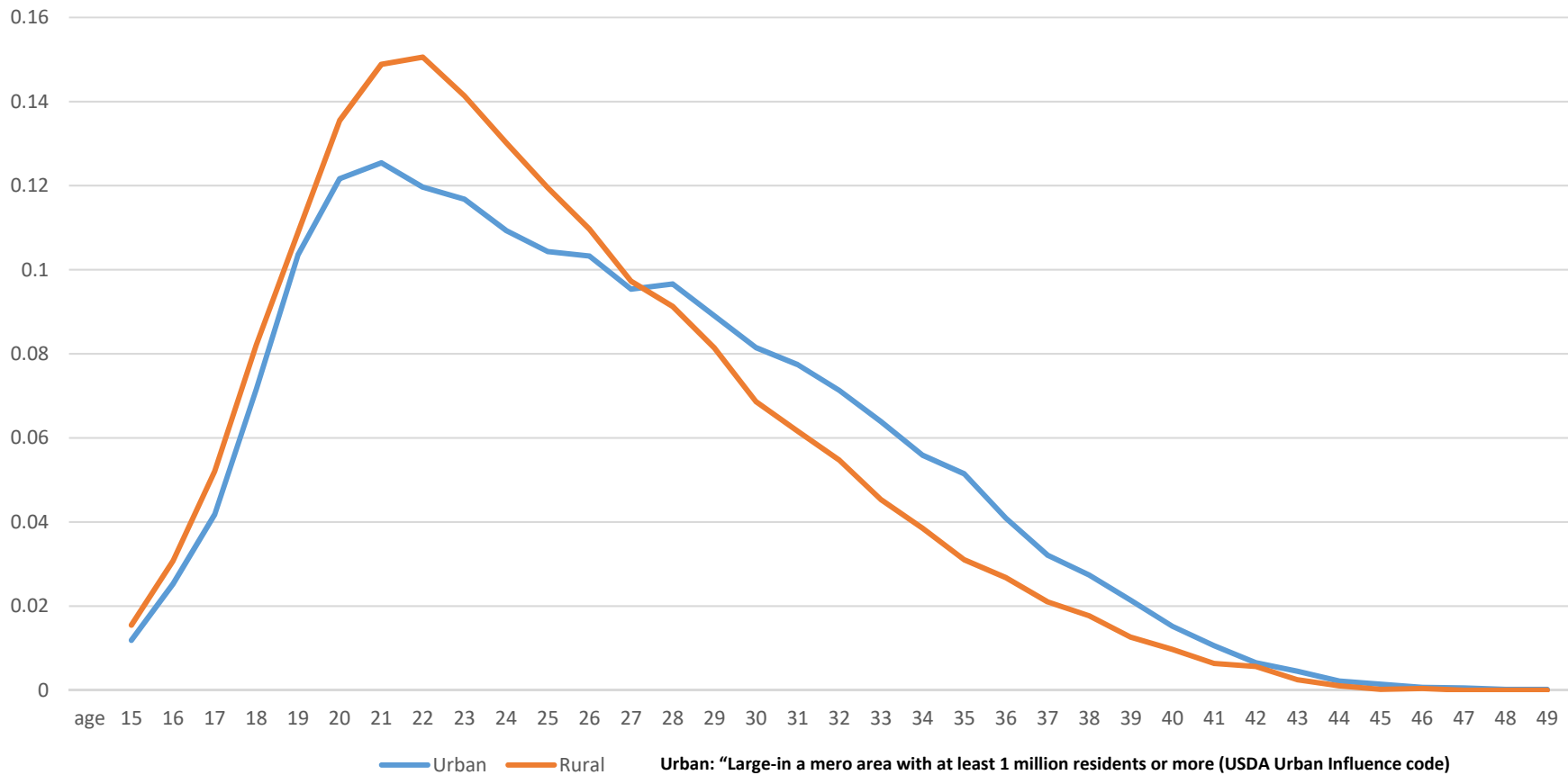
Projecting Race/Ethnicity of the Newborns

- **Child's (under 17) Race by Mother's Race, 2000 IPUMS**

Mom/Child	ChdWhite	ChdBlack	ChdHispanic	ChdAsian	ChdOther
White	**92.8%**	0.6%	4.8%	0.3%	**1.6%**
Black	0.3%	**97.8%**	0.9%	0.0%	**1.0%**
Hispanic	2.3%	0.3%	**97.3%**	0.0%	**0.1%**
Asian	2.4%	1.6%	3.2%	**83.6%**	**9.2%**
Other	29.5%	0.8%	15.2%	1.9%	**52.6%**

- **Child's (under 17) Race by Mother's Race, 2010 IPUMS**

Mom/Child	ChdWhite	ChdBlack	ChdHispanic	ChdAsian	ChdOther
White	**87.6%**	0.9%	8.4%	0.3%	**2.9%**
Black	0.2%	**96.3%**	1.7%	0.0%	**1.7%**
Hispanic	2.2%	0.4%	**97.1%**	0.0%	**0.3%**
Asian	1.7%	0.2%	1.9%	**87.4%**	**8.8%**
Other	12.5%	7.3%	14.2%	1.9%	**64.2%**

"Special" Populations – An Example
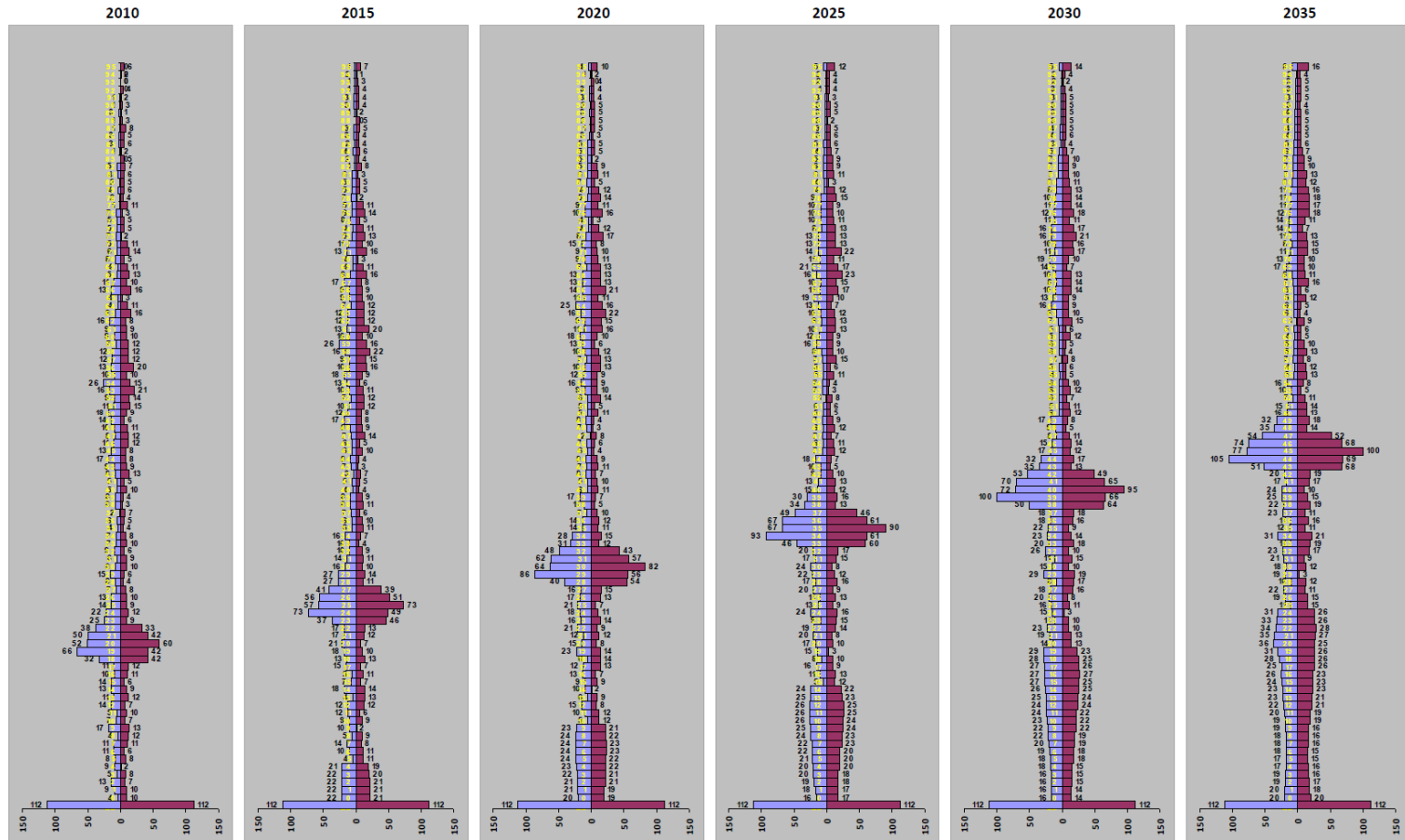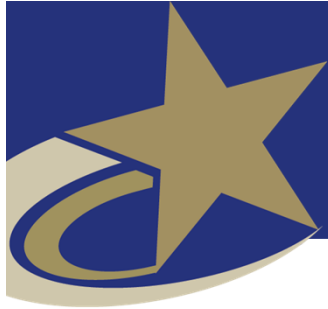
Texas Population Projections Program

- Two ways to access projection products

  ➤ *Data available for downloads at* **http://txsdc.utsa.edu/Data/TPEPP/Projections/**

  ➤ *Can be customized using the Population Projections Tool*

Future Plans

- **No new population projections until after 2020**

- **Potential specialized projections that we could renew**
  - ➢*Household, work force, enrollment, educational attainment*
  - ➢*Poverty, disability, vehicle ownership*
  - ➢*Obesity, diabetes, cardiovascular disease, physician need*

- **Collaborations**

Thank you!

Questions and comments?

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