



Estimates and Projections for Texas

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Texas Demographic Center Population Estimates Program

- Required by Texas Law to produce population estimates for the State and its **counties** and **places** every year.
- TDC surveys, Administrative data and public data are used; Data collection ends on June 1, preliminary estimates out in September and final released in October.
- Three methods are used: Component Method II, Ratio Correlation and **Housing Unit**;
- County Estimates are **controlled** to the Census Bureau State Population Estimates; Place Estimates are controlled to TDC County Estimates.
- Controlled Estimates from the three methods are evaluated against estimates from other sources, mainly those from the Census Bureau, and historical trends to make the final TDC estimates



Three Methods are used in the TDC population Estimates

□ Component Method II

- $Population_{(t+k)} = Population_t$
+ $Natural\ Increase_t (Births_t - Deaths_t)$
+ $Net\ Migrants_t (In-mig_t - Out-mig_t)$
- *Vital statistics data, school enrollment, medicare data, GQ*

□ Housing Unit

- $Population(t+k) = Population + New\ Housing\ Units * HH\ size$
- *Building permit data, annexation & boundary data, GQ*

□ Ratio Correlation

- *Regression method using symptomatic indicators*
- *Birth, death, voter registration, vehicle registration, housing unit*

□ Group Quarter Population

- *Dorms, prisons, military barracks, nursing homes...*



“Symptomatic Indicators” are Powerful Predictors of Population

Mostly stable overtime

High Correlations

State Ratios
Enrollment/Population

County Correlation
Population&Enrollment

Vehicle Registration

2010

0.862

0.998

2020

0.826

0.997

Voter Registration

2010

0.515

0.997

2020

0.553

0.998

School Enrollment (2nd-8th Grade)

2010

0.120

0.996

2020

0.110

0.994

Medicare Enrollment

2010

0.099

0.993

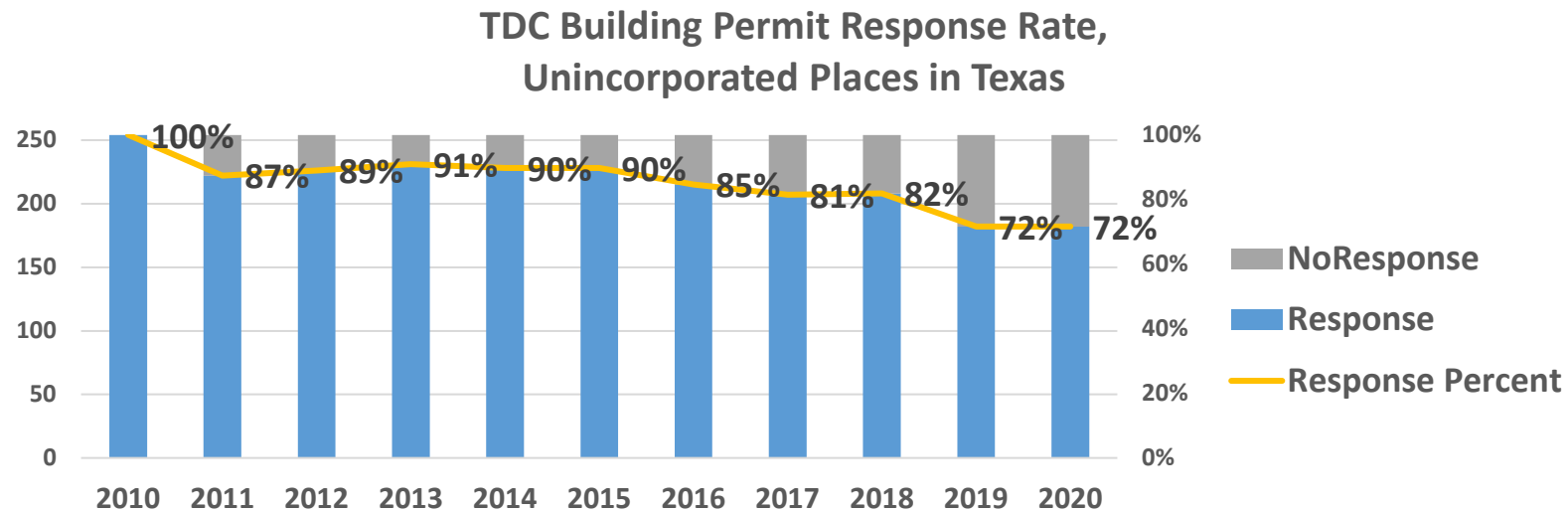
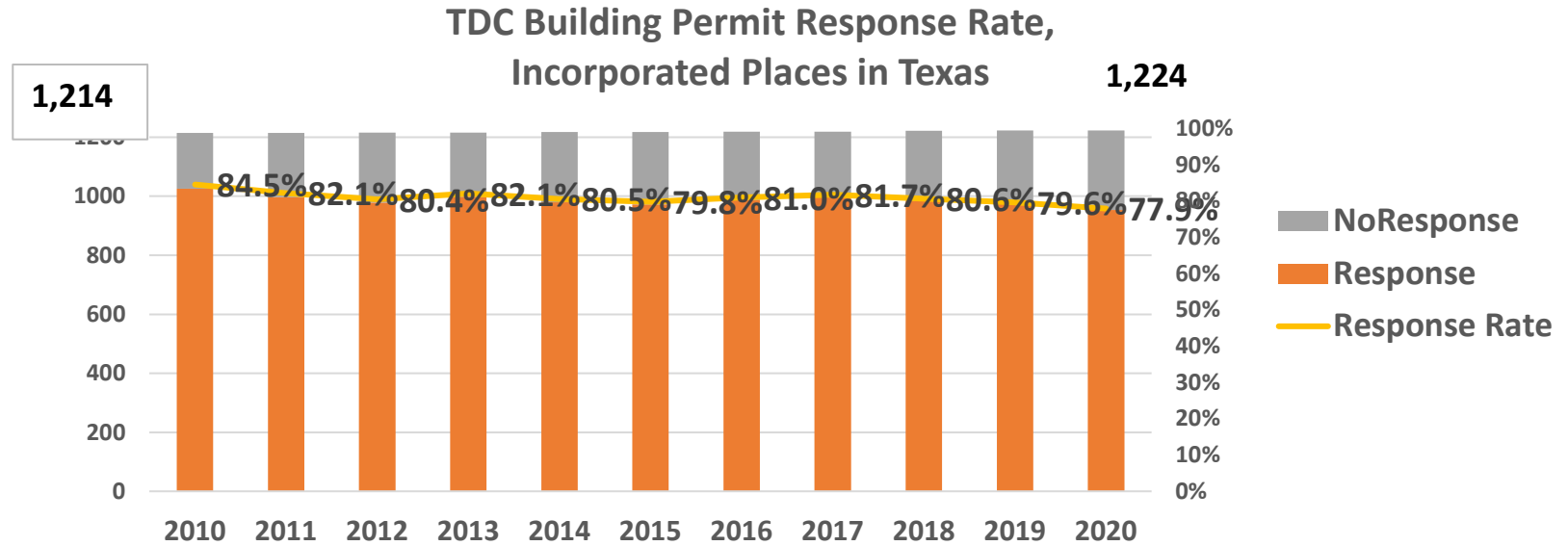
2020

0.126

0.995



TDC Building Permit Survey





Comparing TDC 2020 Estimates with the Decennial Census, State of Texas

	Census 2020	CB Estimates	Housing Unit	Ratio Correlation	Component Method II
Population	29,145,505	29,360,759	29,034,349	29,373,713	30,998,108
Numeric Difference		215,254	-111,156	228,208	1,852,603
Percent Difference		0.74	-0.38	0.79	6.31



Summary Measures of Estimation Errors, CB 2020 and TDC 2020

	CBEst	HousingUnit_TDC_2020	RatioCorrelation	ComponentMethodII
Bias_Measurements				
Mean_Error	847	-438	898	7,294
Median_Error	348	530	1,040	1,476
MALPE(%)	4.4	7.7	8.8	9.6
% Positive	76.0	76.0	85.4	83.9
Median_ALPE (%)	2.3	5.1	7.5	8.6
Trimmed_mean (5%)	3.2	6.0	8.1	9.0
Index of Misallocation	0.56	1.59	1.83	3.14
Accuracy_Measurements				
Mean_Absolute_Error	1,557	3,576	4,108	8,123
Median_Absolute_Error	451	897	1,337	1,615
MAPE (%)	5.5	9.5	9.7	11.9
Median_APE (%)	3.2	6.1	7.7	9.3
RMSPE (%)	13.7	18.8	13.2	16.2
GMAPE (%)	2.5	5.1	5.9	7.7
Trimmed_APE_mean (5%)	4.1	7.4	8.7	10.6

Note: Selected measures and their calculations guided by Swanson, D and Tayman, J, 2012, *Subnational Population Estimates*



Access TDC Estimates Data, V2018 and V2022

TEXAS DEMOGRAPHIC CENTER
 LLOYD POTTER
 State Demographer

Home > Data > TPEPP > Population Estimates

Newly Released
2021 Population Estimates
 Estimates of the total population for the state, counties and places are available.

2021 Population Estimates
 Final population estimates for counties and places are now available for July 1, 2021 and January 1, 2022. Due to delays in the 2020 data releases from the Census Bureau, the 2021 estimates will not include data by age, sex, and race/ethnicity. These variables will be included in future releases.

If you have downloaded the preliminary estimates, please note that we have made changes to our final estimates based on the feedback and new information we have received since the release of the preliminary estimates.

The final estimates may be accessed from the files [below](#).

Infographic
 The Texas Demographic Center collects building permit data for residential housing to estimate population change for Texas cities and counties. The 2021 new residential housing data aligns with the state's population growth trends within the Texas Triangle.

[View Infographic](#)

Access 2021 Population Estimates below:

Data	
	2021
Total Population By County	CSV PDF
Total Population By Place	CSV PDF
Total Population By Metropolitan Statistical Area	CSV PDF
Total Population By Council of Governments	CSV PDF
Age, Sex, and Race/Ethnicity for State and Counties	N/A

Methodology	
	2021
Total Population	PDF
Age, Sex, and Race/Ethnicity	N/A

Customized table tool available fall 2023 when new estimates are available



Comparing TDC and Census Bureau Population Estimates

- ❑ **Timeline**
 - CB: estimates for July of the previous year from ***December to June***:
 - TDC: estimates for July of previous year and January of current year in ***early October***.
- ❑ **The input data**
 - CB: some input data are projected;
 - TDC: up-to-date data.
- ❑ **Methodology.**
 - CB: the cohort component method, a more “direct” method; access to individual level administrative data; migration estimates likely more accurate;
 - TDC: a combination of three methods (cohort component, ratio-correlation, and housing unit method); compare with Census Bureau estimates.
- ❑ **Data Available**
 - CB: July Estimates for previous year; components of Change;
 - TDC: July Estimates for previous year and January estimates for Current year.
- ❑ **Interactions with the local government.**
 - CB: collaboration with TDC; the challenge program;
 - TDC: collect data from state agencies and local governments; preliminary sent to local governments for review.

Which time frame fits you better?

Is consistency an issue?

Use caution when comparing estimates from different sources and decades.



Texas Demographic Center Population Projections Program

- Required by Texas Law to produce population projections for the State and its **counties** every other year. Release in fall. Available by:
 - Single year of age;
 - Male and Female;
 - NH White, NH Black, Hispanics, NH Asian and NH Other;
 - Single year, 40 years out in the future from the base year.

- Cohort Survival method is used to account for trends in fertility, mortality and migration.

- State and County projections are produced separately. County projections are **controlled** so that they add up to the state projections.



TDC Population Projection Illustration

Population 2020 (Ages 0 to 95+)

- DEATHS

*[= Base Population * Projected Death Rates]*

+ NET MIGRANTS

*[= Base Population * Constant Migration Rates]*

Population 2021 (Ages 1 to 95+)

+ BIRTHS

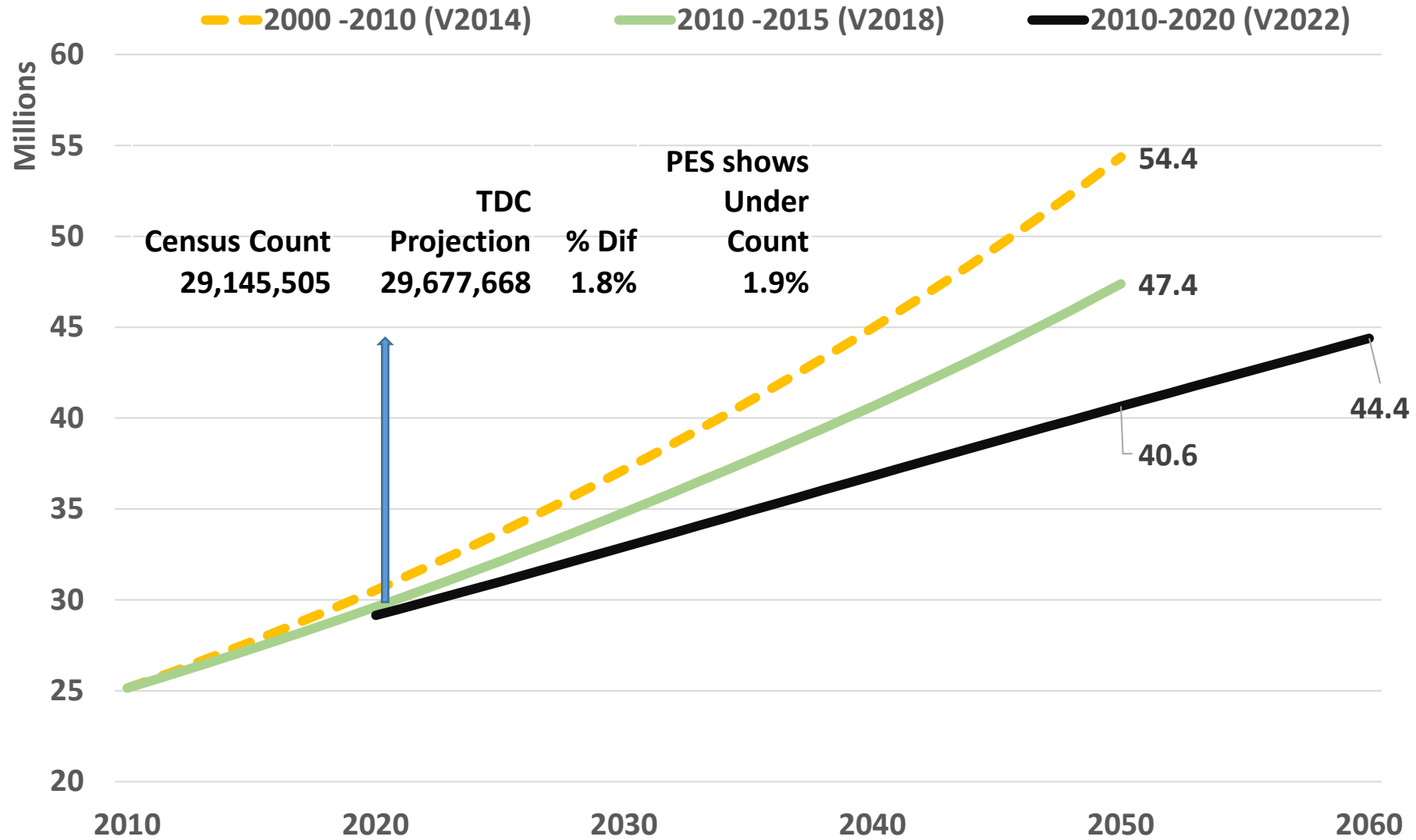
*[= Women 15 -49 * Projected Fertility rates (ASFR)]*

Population 2021 (Ages 0)

Population 2021 (Ages 0 to 95+)



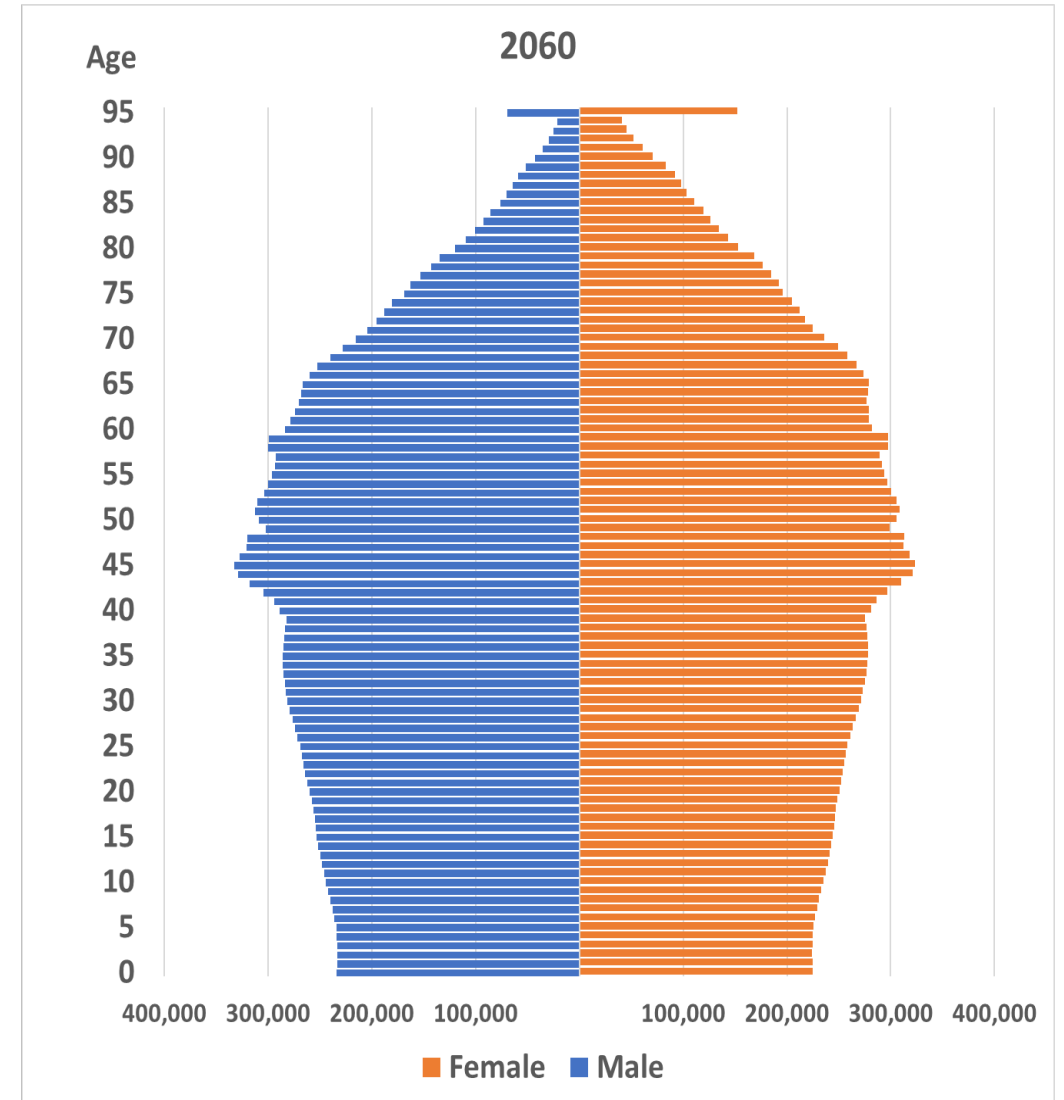
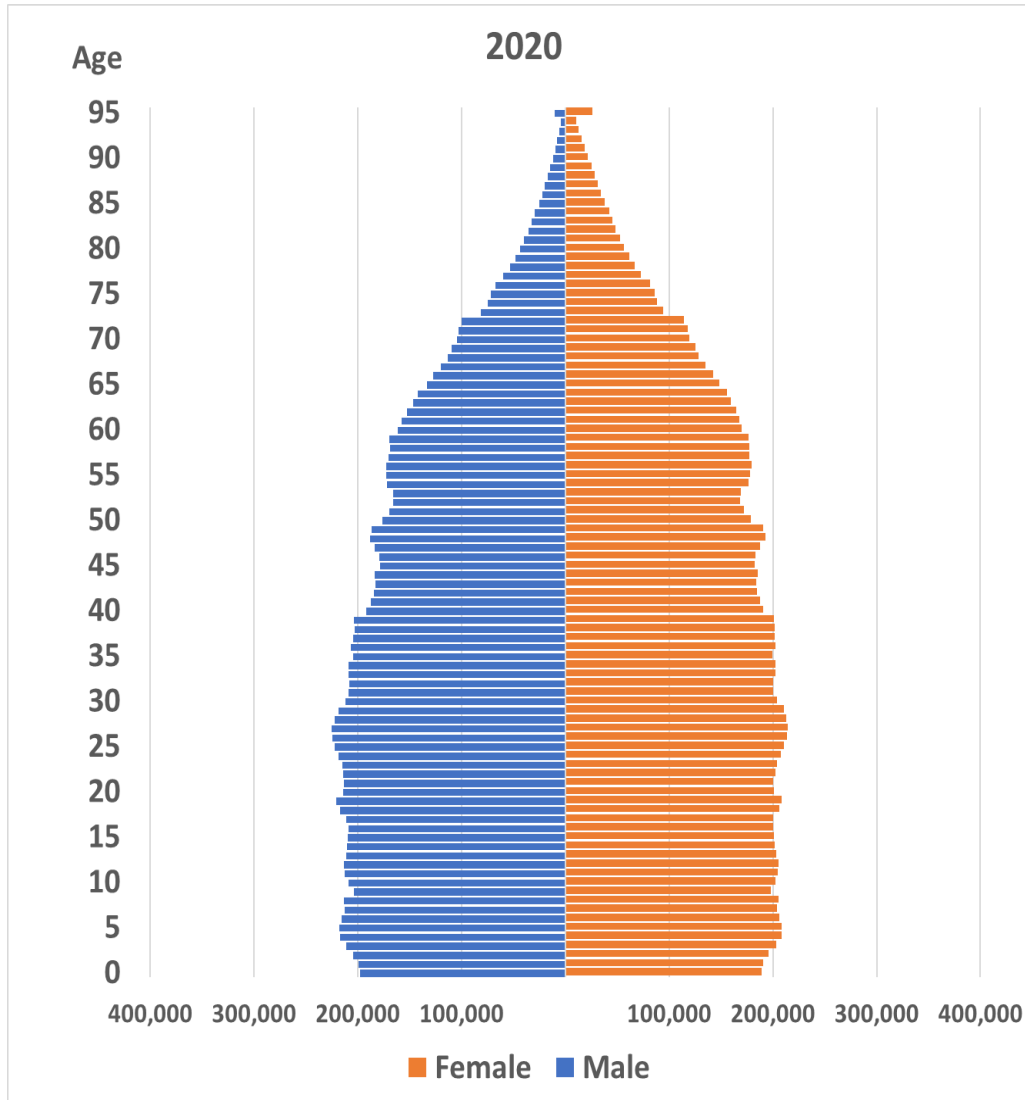
Projected Population Growth in Texas with Various Migration Scenarios



SOURCE: Texas Demographic Center, Vintage 2014 and 2018, 2022 Population Projections

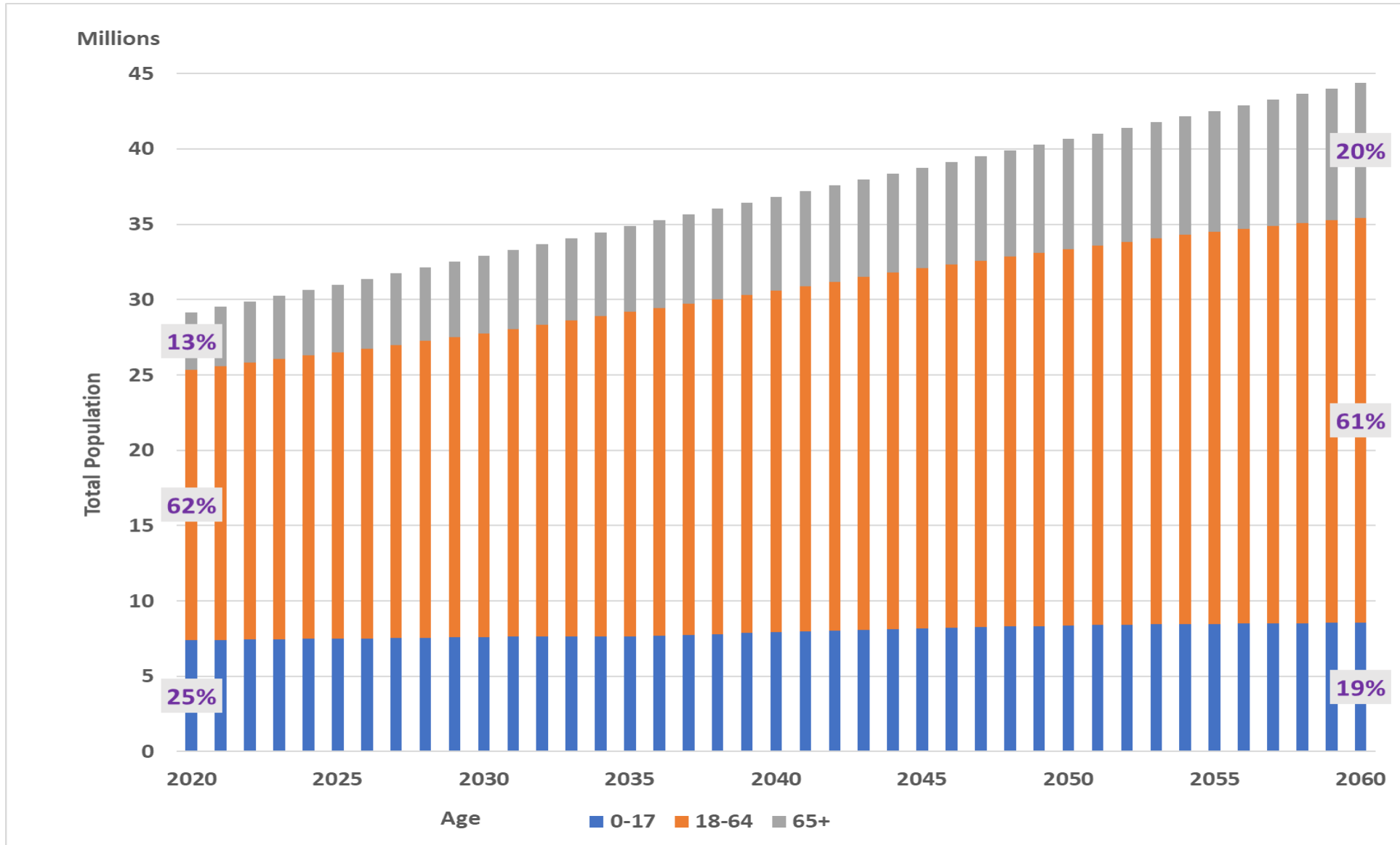


Projected Population by Age and Sex, Texas, 2020-2060





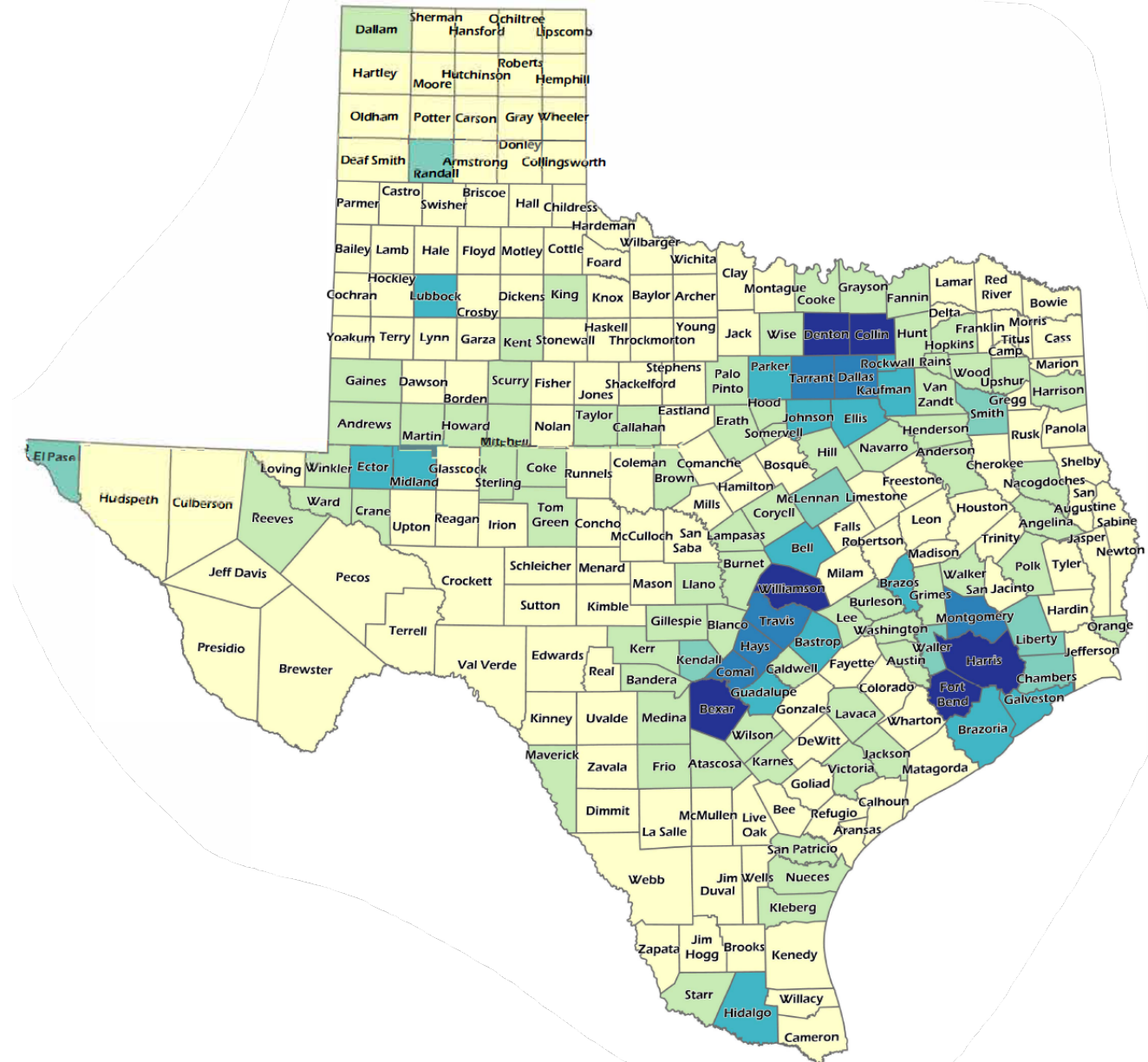
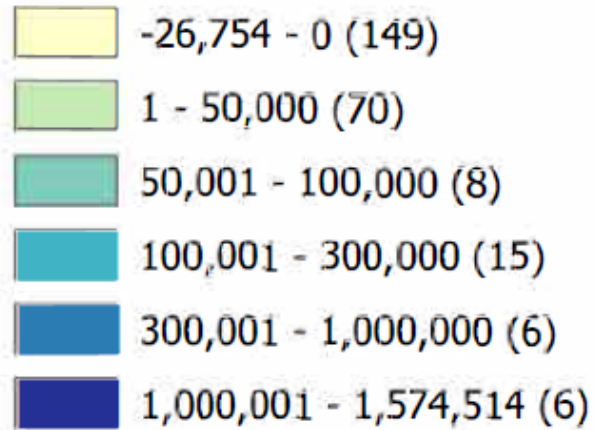
Projected Population Composition, Texas, 2020-2060





Projected Population Change, Texas Counties, 2020-2060

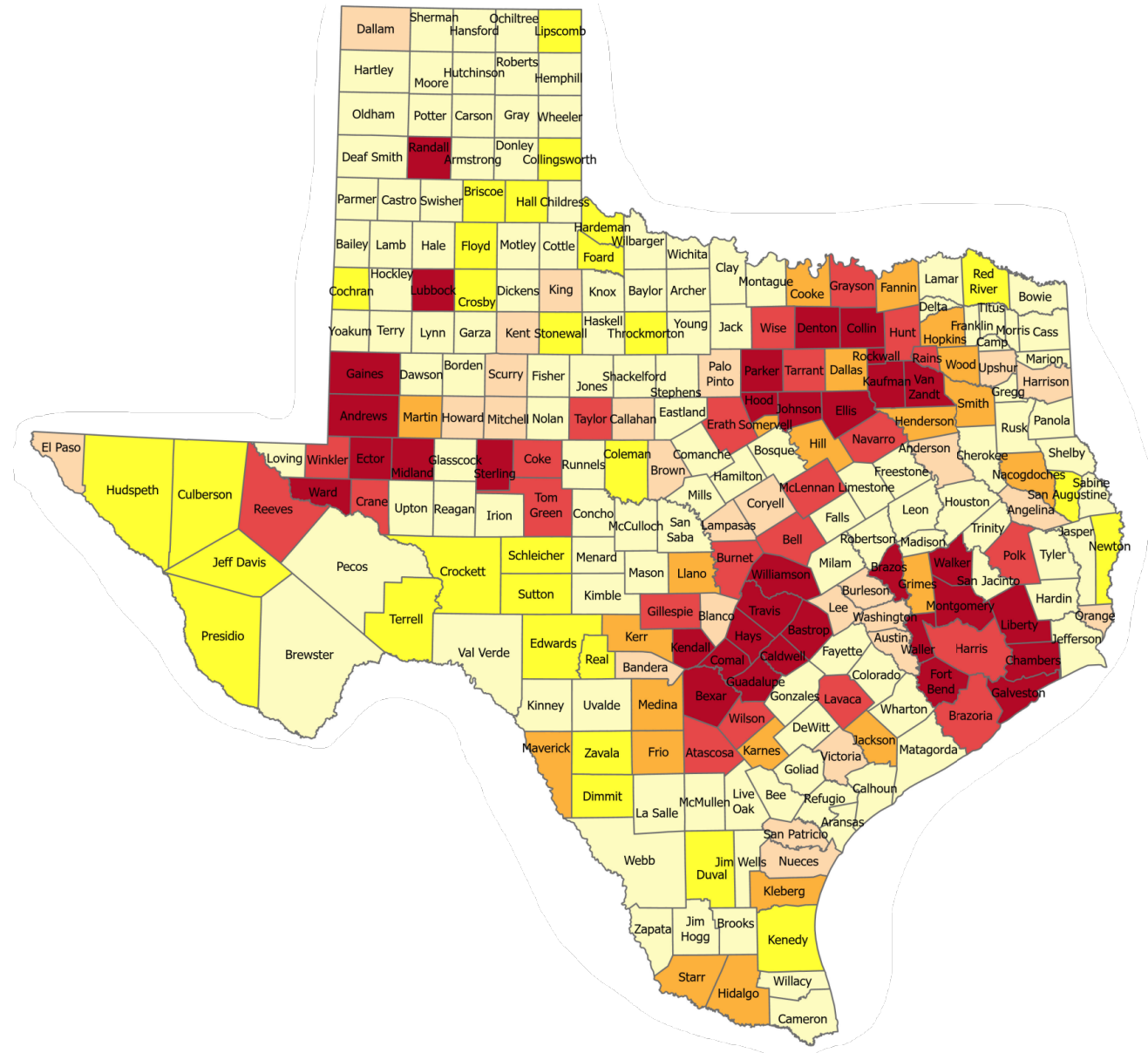
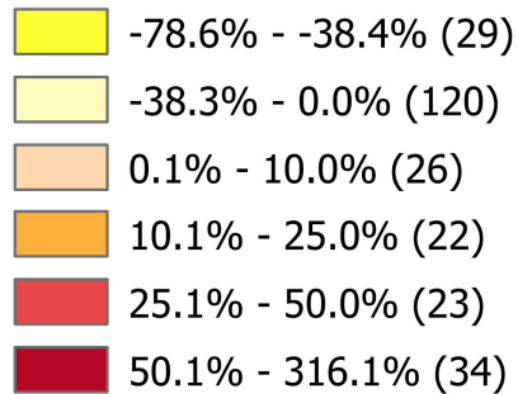
Projected Population Change
2020-2060





Projected Percent Population Change, Texas Counties, 2020-2060

Projected Percent Change 2020-2060





Access TDC Projections Data, V2018 and V2022

Customized tables available for V2018 TDC projections

TEXAS DEMOGRAPHIC CENTER
LLOYD POTTER State Demographer

Home > Data > TPEPP > Population Projections

Texas Population Projections Program

The Texas Population Projections Program produces projections of the population of the state and all counties in the state by age, sex, and race/ethnicity. These projections are used extensively by public and private entities. The projections involve the use of certain assumptions about future events that may or may not occur. Users of these projections should be aware that although the projections have been prepared with the use of detailed methodologies and existing demographic patterns, they may not accurately project the future population of the State or particular counties in the State. The projections should be used only with full awareness of the inherent limitations of population projections and with detailed knowledge of the procedures and assumptions delineated in the methodology statement.

Vintage 2022 Population Projections (Latest Projections)

The Texas Demographic Center Vintage 2022 projections consist of the projections of the resident population of the State by age and sex, and of the total resident population of all counties in the State for each year from 2020 through 2060, with the 2020 population equal to the 2020 census count for the State of Texas and all counties in Texas. Both the state and the county projections are available in two migration scenarios.

Due to the delay in the release of the 2020 Decennial Census detailed demographic data and the changes implemented in the 2020 Decennial Census, such as the new measures to provide privacy protection as well as the changes in the race/ethnic questions and the processing, projections with demographic details, especially at the county level, are not available now. Further research is needed to produce reasonable, detailed projections by race/ethnicity. Contact TDC for questions.

Projections Methodology Please carefully review the entire methodology summary prior to using the data.

State Projection 1.0 Migration Scenario
Assume the migration rates between 2010-2020. Recommended for **near-term** planning purposes. Population by age and sex for 2020-2060 in 1-year increments for State of Texas.
Download (Format: CSV Size: ~337 KB)

State Projection 0.5 Migration Scenario
Assume the migration rates half of those between 2010-2020. Recommended for **long-term** planning purposes. Population by age and sex for 2020-2060 in 1-year increments for State of Texas.
Download (Format: CSV Size: ~336 KB)

County Projection 1.0 Migration Scenario
Assume the migration rates between 2010-2020. Recommended for **near-term** planning purposes. Total Population for 2020-2060 in 1-year increments for all counties in Texas.
Download (Format: CSV Size: ~334 KB)

County Projection 0.5 Migration Scenario
Assume the migration rates half of those between 2010-2020. Recommended for **long-term** planning purposes and for areas or counties with extraordinary population changes in the last decade. Total Population for 2020-2060 in 1-year increments for all counties in Texas.
Download (Format: CSV Size: ~332 KB)

Vintage 2018 Population Projections

2018 Sex and Race/Ethnicity Total Population

2018 Age, Sex, and Race/Ethnicity Population

Household

Labor Force

2018 Texas Population Projections Data Tool

2018 Population Projections Release Update

Following the release of our 2018 population projections, we observed anomalies in the projections of the non-Hispanic Asian and non-Hispanic Other populations in a few counties. We have revised our projections to address this issue. The new updates do not affect the non-Hispanic White, non-Hispanic Black, or the Hispanic populations and have a minimal impact on the state total population.

Both the downloadable data and the online projections tool have been revised to reflect these updates. If you downloaded our population projections prior to **July 16, 2019**, please make sure to re-download the data and use our updated projections.

We apologize for any inconvenience. Please contact the Texas Demographic Center with any questions. Thank you!

Instructions & Information

- Methodology:** Please carefully review the entire methodology prior to using the data.
- Area Selection:** To make multiple selections within an area hold down the <CTRL> key.
- Grouping:** Separate will display one row per area selected. Aggregate will display one row with selected areas aggregated.
- Year Criteria:** Each year will be listed separately. You can also list years (eg. 2010-2020,2022,2030-2035).
- Age Criteria:** Valid ages are from 0 to 95 where 95 signifies all people 95 and above. You can also define age groups (eg. 5-10,11-15,20-22,45,51), which will be aggregated.

State Level Selection

State Level Data: include data for entire state? Yes No

County & County Based Region Selection

Area Type: County | MSA METRO (Sep 2018) | COG

Grouping: Separate | Separate | Separate

Area: Anderson, Andrews, Angelina, Aransas, Archer, Armstrong, Atascosa, Austin, Bailey, Bandera, Bastrop, Baylor, Bee, Bell, Bexar, Blanco, Borden, Bosque, Bowie, Brazoria, Brewster, Briscoe, Brooks, Brown, Burleson, Burnet, Abilene, Amarillo, Austin-Round Rock-Georgetown, Beaumont-Port Arthur, Brownsville-Harlingen, College Station-Bryan, Corpus Christi, Dallas-Fort Worth-Arlington, El Paso, Houston-The Woodlands-Sugar Land, Killeen-Temple, Laredo, Longview, Lubbock, McAllen-Estancia-Mission, Midland, Odessa, San Angelo, San Antonio-New Braunfels, Sherman-Denison, Texasarkia (TX Only), Tyler, Victoria, Waco, Wichita Falls, Alamo Area, Ark-Tex, Brazos Valley, Capital Area, Central Texas, Coastal Bend, Comcho Valley, Deep East Texas, East Texas, Golden Crescent, Heart of Texas, Houston-Galveston, Lower Rio Grande Valley, Middle Rio Grande, North Texas, North Central Texas, Panhandle, Permian Basin, Rio Grande, South East Texas, South Plains, South Texas, Tarrant, West Central Texas

Criteria

Years (Not Aggregated)
 All (2010...2050)
 Every 5 yrs starting at 2010
 List of Years (comma separated)

Ages (Aggregated)
 All (0-95)
 Every 5 yrs starting at 0
 Age Groups (comma separated)

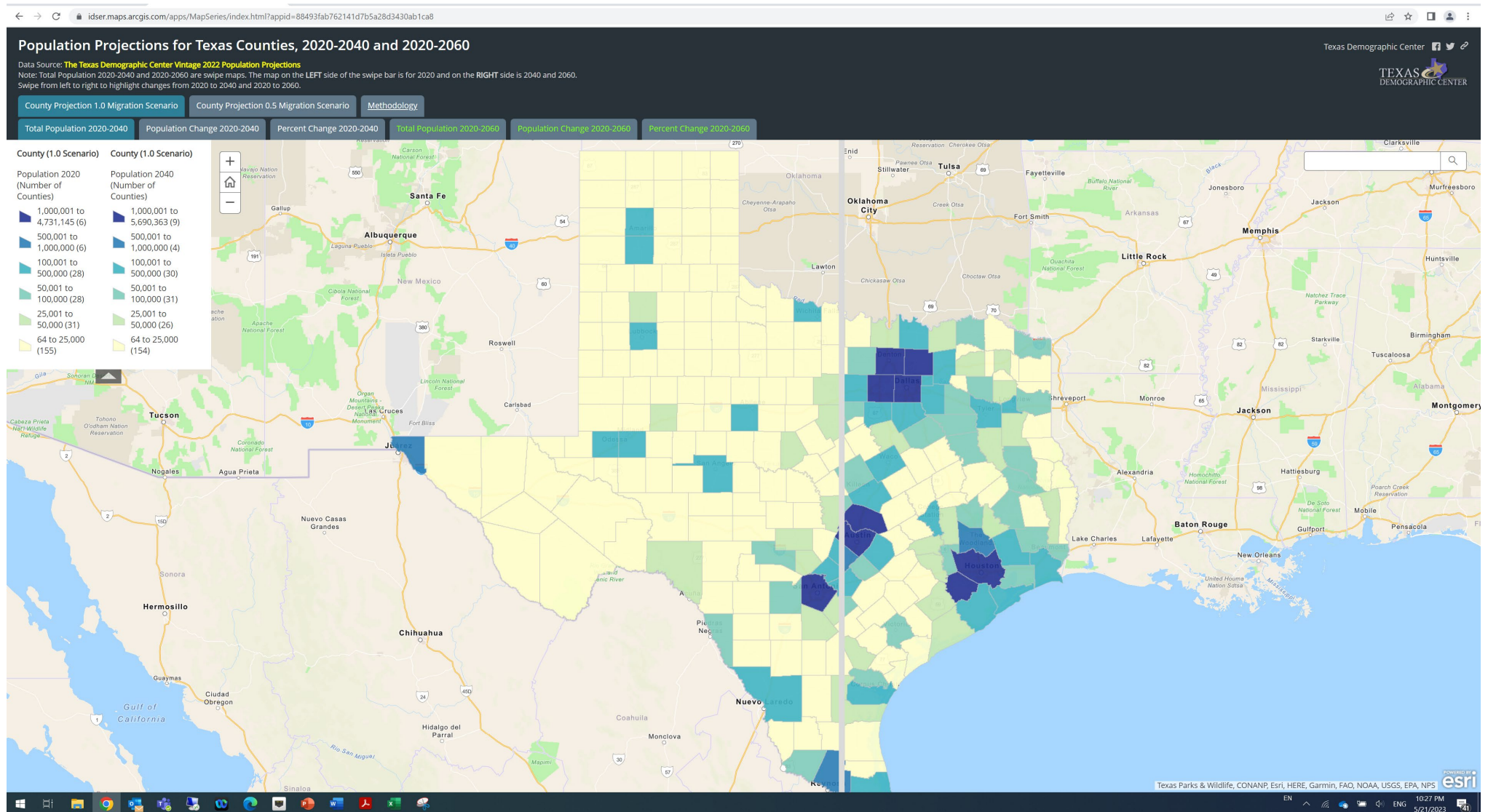
Sex
 Male Female

Race / Ethnicity
 NH NH White NH Black
 Hispanic NH Asian NH Other
* NH = Non-Hispanic

Submit Reset



Swipe Maps for TDC Projections





Frequently Asked Questions

- Why is your estimate different from your projection for the same year? Which one should I use?

- What are migration scenarios?

- Why is the projection for my county lower at 1.0 migration scenario than that at the 0.5 migration scenario?

- Why did my county grow in the last decade but projected to decline in the future?

- Why is my county projected to grow more slowly than a county that saw similar growth rate with us in the last decade?

....



Challenges in the New Decade

- Delays and possible undercounts (for Texas) in the 2020 Decennial Census.

- Changes in the public data released by the Census Bureau.
 - “Differential privacy (noises)” and the “adaptive design” (varying population threshold for publication);
 - “Impossible/improbable” values, parts not adding up to totals, inconsistencies between datasets;
 - Base (2020) population for the Census Bureau estimates can change

- Challenges in data collections.

- Communications and outreach to data users



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