TEXAS STATE DATA CENTER

Projections of the Population of Texas and Counties in Texas by Age, Sex and Race/Ethnicity for 2010-2050

Produced by:

The Office of the State Demographer

The Texas State Data Center

in collaboration with

The Hobby Center for Public Policy

November 2014

Introduction

The projections of the population of Texas and each county were prepared by Office of the State Demographer and the Texas State Data Center in collaboration with Hobby Center for Public Policy . Lloyd Potter, Ph.D. serves as the Texas State Demographer and as the Director of the Texas State Data Center. Nazrul Hoque, Ph.D., of the Hobby Center for Public Policy at the University of Houston, provided technical leadership for production of these population projections. Dr. Potter also serves as a faculty member in the Department of Demography and as the Director of the Institute for Demographic and Socioeconomic Research at the University of Texas at San Antonio.

These projections, like all 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 with extensive attempts have been made to account for existing demographic patterns, they may not accurately project the future population of the State or of particular counties in the State. These projections should be used only with full awareness of the inherent limitations of population projections in general and with particular and detailed knowledge of the procedures and assumptions delineated below which characterize the projections presented in this report.

The current projections are of the population of the State and of all counties in the State for each year from 2010 through 2050. These are thus similar in form to those released by the program in November 2012 but have been revised using the most recent birth and death data and also the most recent information on special populations. They are by single years of age for ages 0 through 85 years of age and older for males and females in each of four racial/ethnic groups—Non-Hispanic Whites, Non-Hispanic Blacks, Hispanics (of all races), and persons from Non-Hispanic Other racial/ethnic groups. The total population is the sum of these four racial/ethnic groups with their sum for 2010 being equal to the 2010 census count for the State of Texas and for all counties in Texas.

This summary provides a relatively detailed description of the projection methodology and then discusses the bases for, and the assumptions used in, creating the alternative projection scenarios. It concludes with a description of the products available from the projection process.

Methodology for Projections

The projections were completed using a cohort-component projection technique. As the name implies, the basic characteristics of this technique are the use of separate cohorts--persons with one or more common characteristic--and the separate projection of each of the major components of population change--fertility, mortality and migration--for each of the cohorts. These projections of components for each cohort are then combined in the familiar demographic bookkeeping equation as follows:

$$P_{t_2} = P_{t_1} + B_{t_1-t_2} - D_{t_1-t_2} + M_{t_1-t_2}$$

Where: P_{t_2} =the population projected at some future date t_1-t_2 years hence

P_{t_1} = the population at the base year t_1

$B_{t_1-t_2}$ = the number of births that occur during the interval t_1-t_2

$D_{t_1-t_2}$ = the number of deaths that occur during the interval t_1-t_2

$M_{t_1-t_2}$ = the amount of net migration that takes place during the interval t_1-t_2

When several cohorts are used, P_{t_2} may be seen as:

$$P_{t_2} = \sum_{i=1}^{n} P_{c_i,t_2}$$

Where: P_{t_2} is as in the equation above

P_{c_i,t_2} = population of a given cohort at time t_2 and

$$P_{c_i,t_2} = P_{c_i,t_1} + B_{c_i,t_1-t_2} - D_{c_i,t_1-t_2} + M_{c_i,t_1-t_2}$$

Where: all terms are as noted above but are specific to given cohorts c_i

In this, as in any other use of the cohort-component technique at least four major steps must be completed:

1. The selection of a baseline set of cohorts for the projection area or areas of interest for the baseline time period (usually the last census and for other dates for which detailed base data are available);
2. The determination of appropriate baseline migration, mortality, and fertility measures for each cohort for the baseline time period;
3. The determination of a method for projecting trends in fertility, mortality and migration rates over the projection period;
4. The selection of a computational procedure for applying the rates to the baseline cohorts to project the population for the projection period.

Each of these steps as performed for the Texas State Population Estimates and Projections Program's projections are briefly discussed in the pages which follow.

Selection of Baseline Cohorts

The baseline cohorts used in the projections are single-year-of-age cohorts for males and females of Non-Hispanic White, Non-Hispanic Black, Hispanic (of all races) and Non-Hispanic Other racial/ethnic groups extracted from Summary File 1 of the 2010 Census of Population and Housing (US Bureau of the Census 2011). Population data for 2010 were used as the starting base because they provide the last complete count information available.
The development of 2010 Census-based baseline populations is essential if baseline rates of fertility, mortality, and especially migration are to be computed and the projections are to provide meaningful comparisons with population values for past time periods and projections. As described below, ensuring relative comparability of such baseline populations requires the use of specific procedures.

The baseline populations for these projections consist of four groups. These are an Non-Hispanic White (Anglo), Non-Hispanic Black, Hispanic (of all races), and a Non-Hispanic Other population group. These consist of the census categories: Non-Hispanic White alone, Non-Hispanic Black or African American alone, Hispanics of all races, and persons in all other non-Hispanic racial groups referred to as the Other population group. This latter (Other population) group also includes all persons listing two or more races. The initial releases of 2010 based projections for the State do not include a separate Non-Hispanic Asian population. The Office of the State Demographer and the Texas State Data Center are working to refine the methodology to ensure production of defensible projections for this group. Once the methods have been refined a supplemental set of these projections will be released that provide Non-Hispanic Asian specific projections.

The use of these classifications allowed for the creation of 4 mutually exclusive groups (i.e., Non-Hispanic White or Anglo, Non-Hispanic Black or African American, Hispanic, and Non-Hispanic Other) that are directly comparable to those used in 2000. The potential projection of two other subgroups was examined but a decision was made not to include separate projections for these groups in this set of projections at this time. These were a Non-Hispanic Asian alone and a multi-race group. They were not included because of the small number of persons in these groups in many counties and, in the case of multiple race groups, a lack of historical data for guiding future projections of fertility, mortality and migration rates for these groups. The creation of projections for these groups will be considered in future projection releases.

It is essential to note that the use of these population bases will result in some discontinuities with previous projections made by the program. The previous post 2000 projections utilized a somewhat different set of groupings in which multi-race groups were allocated to individual single race groups. This was necessary because the 2000 Census was the first to allow respondents to indicate that they were members of more than one race. As a result

single race groups for 1990 and 2000 were not directly comparable and any computation of fertility, mortality or migration rates that did not adjust for this change in data collection procedures would have resulted in incorrect rates for the four major groups and to clearly fallacious projections. The procedures used to make allocations of multi-race groups to the single race/ethnicity categories are described in the procedures for the pre-2010 projections (see Texas Population Estimates and Projections Program 2009). With the completion and release of 2010 data there were appropriate data for the two adjoining decennial periods of 2000 and 2010 and thus in the projections presented here direct census categories that did not require allocations have been used. This provides directly comparable values for 2000 to 2010 and directly comparable fertility, mortality, and migration rates for 2000 and 2010. The major change resulting from this is that the Non-Hispanic Other category increases as a result of including two or more races in the category for both 2000 and 2010.

It is also necessary to adjust the base population for "special populations". Special populations are populations who reside in an area, usually in institutional settings, who do not generally experience the same demographic processes over time as the indigenous population in the area. Rather, they tend to come into and leave an area at fixed intervals. Examples of such populations are college populations, prison populations, military base populations, and other persons in institutional settings. Because their movement into and out of an area is a function of events (e.g., enrollment, graduation, incarceration) which are not determined by local socioeconomic conditions, special populations must be removed from the base populations of projection areas before birth, death and migration rates are applied to the base population. If special populations of substantial size are not removed, they will create distortions in age and other characteristics of the population that will remain in the population through the cohort aging process and create inaccuracies in the projections. Special populations are, therefore, generally removed from the cohort base, the base cohorts projected forward and a separate projection of the special population for the projection date is added to the projected base cohorts to obtain the projection of the total population.

In Texas, several continuing special population groups are especially large and must be removed from base populations. These are college and university populations, state prison populations, military populations, and populations in other State institutions. In the projections presented here, each of these groups was removed from the base population of the counties in which they are located by subtracting these special populations from the 2010 population reported in the Census for these counties. Since these special populations must be subtracted from base populations that are age, sex and race/ethnicity specific, it was necessary to obtain age, sex and racial/ethnic detail for the special populations. This was done for the college populations by obtaining information on college enrollment for each public college and university in the State for 2010 by age, sex and race/ethnicity from the Texas Higher Education Coordinating Board. For prisons, information on the age, sex and race/ethnicity of prisoners in each institution in 2010 was obtained from the Texas Department of Criminal Justice. For both college enrollments and prisons, the most recent projected values from the appropriate

agencies (Texas Higher Education Coordinating Board and the Texas Department of Criminal Justice) for the periods after 2010 were incorporated in the projections. For other institutions, information on age, sex and race/ethnicity were obtained from the group quarters data from the 2010 Census.

Given the distributions of the special populations by age, sex and race/ethnicity, it was then possible to subtract the special populations from the baseline 2010 Census cohorts to obtain a baseline set of cohorts free from the influence of special populations. These procedures for baseline cohorts were completed for all counties in the State. However, following standard practice, special populations were removed from the base population only when they made up five percent or more of the population of the area. For counties with special populations of sufficient size, the baseline cohorts without special populations are projected forward and projections of special populations for the projection years are added to the projections for the baseline cohorts to obtain projections of the total population.

Determination of Baseline Fertility, Mortality and Migration Rates

Baseline rates for fertility and mortality were developed based on births for 2009-2011 and deaths 2009-2011. The rates are as described below.

Fertility Rates

Age, sex and race/ethnicity specific fertility rates were computed using births by age, sex and race/ethnicity and place of residence of the mother. The numerators for such rates are the average number of births for 2009, 2010 and 2011 for mothers in each age, sex and race/ethnicity group and the denominators are the population counts by age, sex and race/ethnicity in 2010. Birth data to compute the rates were obtained from the Texas Department of State Health Services and data on females by age (10-49 years) and race/ethnicity were obtained from the 2010 Census of Population. These data showed total fertility rates for Non-Hispanic Whites, Non-Hispanic Blacks, Hispanics and the Non-Hispanic Other racial/ethnic groups in 2010 that were 1.87, 1.92, 2.56 and 1.83 respectively. In addition, there were clear signs of declines in fertility across groups with the exception of the Non-Hispanic Other group which was already at very low levels of fertility. Thus, fertility rates were trended over the projection period from 2010 to 2050 toward targeted rates deemed to be reasonable on the basis of change in national patterns for such groups over time. These targeted rates for 2050 were 1.75, 1.75, 2.36, and 1.72 for Non-Hispanic Whites, Non-Hispanic Blacks, Hispanics and Non-Hispanic Others respectively. Baseline Fertility Rates by age and race/ethnicity for the State of Texas are provided in Appendix C.

Mortality Rates

To obtain baseline mortality measures, survival rates by single years of age, for both sexes and for each of the racial/ethnic groups were needed. Survival rates for Non-Hispanic Whites, Non-Hispanic Blacks, Hispanics, and the Non-Hispanic Other racial/ethnic categories were computed using death data from the Texas Department of State Health services for 2009, 2010 and 2011. Because there were no projections of detailed survival rates available for Texas for future dates and no adequate means of discerning how such rates would change using state data alone, projections made by the Census Bureau using national trends in mortality by age, sex and race/ethnicity derived from analysis from the National Center for Health Statistics were used as the basis for projecting state rates. This involved calculating the ratio of each state-level age, sex, and race/ethnicity specific survival rate for Texas to those for the same population subgroups in the Nation in 2010 and then assuming that state age, sex, and race/ethnicity specific rates would remain at the ratios to national rates for 2010 but trend in the same manner as national projections of survival over time. Although this involves assuming no closure between Texas and national rates over time it provides projections of survival rates for Texas that reflected expected patterns of change in mortality levels over time. These rates by age, sex and race/ethnicity for the State of Texas as a whole are shown in Appendix B.

Migration Rates

Migration is the most difficult component process to project and for which to obtain baseline rates. For the Texas projections, rates were derived using a standard residual migration formula. Thus, births and deaths by age, sex and race/ethnicity cohort were added or subtracted (as appropriate) to the 2000 population to produce an expected 2010 population for each cohort. This expected population was compared to the actual Census count to estimate net migration for 2000-2010 and subsequently for later post-2010 time periods. No attempt was made to develop separate scenarios for specific age groups or to formulate scenarios using different assumptions for each of the racial/ethnic groups.

Projection of Trends in Fertility, Mortality and Migration

Projections of Fertility

To project future rates of fertility, county and state-level projections were assumed to follow historical patterns and trends. Projected trends in fertility were informed by 2000 to 2010 trends in fertility. Evaluation of these age and race/ethnicity-specific fertility rates in Texas showed Non-Hispanic White fertility rates were below replacement levels of fertility (i.e., 1.919 instead of the 2.10 necessary for replacement). Rates of decline for this group for 2000 to 2010 showed a decline of 0.038 persons. This rate of decline was assumed to continue for the decades from 2010 to 2010 and 2020 to 2030 and then rates for the remainder of the

projection period were trended to a target level of 1.750 by 2050. Rates for Non-Hispanic Blacks showed a decrease of roughly 3.2 percent from 2000 to 2010 and had a total fertility rate (2.013) just below replacement by 2010. Rates for this group for the projection period were assumed to decline but at a rate approximately two-thirds of the rate for 2000 to 2010 for the period from 2010 to 2050 resulting in a total fertility rate of 1.8 by 2050. Hispanic rates showed a decline from a total fertility rate of 2.85 to 2.674 from 2000 to 2010 but it was not clear whether such a decline was endemic or a function of reduced immigration and the impacts of a major recession. Nevertheless continued decline at reduced levels were projected to occur at a rate of .05 per decade resulting in a 2050 rate of 2.5. This rate suggested a long-term decline from more than 3.0 in previous decades. The Non-Hispanic Other racial/ethnic group had a total fertility rate of 1.83 which is the lowest recorded for a major racial/ethnic group in Texas in recent decades and because of the changing composition of this group was assumed to remain constant rather than decline further as was assumed for the other racial/ethnic groups. Given current economic and other factors there is greater instability in fertility than occurs under normal conditions. As a result, the assumptions regarding fertility will require careful monitoring over time and change in the long-term assumptions may be altered as appropriate in subsequent revisions of these projections.

For the projections reported here, single-years of age, sex and race/ethnicity specific fertility rates and total fertility rates for 2010 were computed for counties using the data and procedures described above. The counties' trends in fertility for the projection period from 2010 to 2050 were then projected by assuming that the county's future fertility would follow the State trend.

Specifically, this involved computing a ratio between the age and race/ethnicity specific birth rate for each age and racial/ethnic group for each county and the comparable State age and race/ethnicity specific birth rate for 2007-2010. This ratio for each age and race/ethnicity specific birth rate for each county was then multiplied by the projected State rate for each of the projection years with the State rates used in the multiplication being those with the trends noted above.

Projections of Mortality

The projections of mortality for the projection period were made with county and state rates being assumed to follow national trends for the projection period and 2009-2010 county and state age, sex and race/ethnicity survival rates being ratioed to national age, sex, and race/ethnicity specific survival rates. The national rates were obtained from the Population Projections Branch of the U.S. Bureau of the Census and reflect recent longterm projections of mortality (U.S. Bureau of the Census, 2008).

Survival rates were ratioed to the projected survival rates for the Nation. The national projections used show a life expectancy for Anglo males of 73 in 2000, and 81 by 2050. For Anglo females the values were 80 and 86. The values for Black males were 66 and 71 and for

females were 74 and 79. The life expectancies for Hispanics were 75 and 81 for Hispanic males and 83 and 87 for Hispanic females. For Others the values were 78 years for males for 2000 and 85 for 2050, and 85 and 91 for females. Life table survival rates for the State and counties for 2010 were ratioed to national rates for 2010 and these rates applied to projected national rates for each year from 2010 through 2050.

Projections of Migration

The migration component is the most difficult to project. For the Texas State Population Projection Program's projections, the age, sex and race/ethnicity specific net migration rates (calculated in the manner described above) were used to arrive at three alternative scenarios (described in the following pages) by systematically altering the assumptions related to the entire set of age, sex, and race/ethnicity specific net migration rates. No attempt was made to develop separate scenarios for specific age groups or to formulate scenarios using different assumptions for each of the racial/ethnic groups.

Special Considerations in the Projection of Component Rates

The computation and projection of fertility and migration rates at the county level is sometimes problematic for counties with small population bases. Given the use of 4 racial/ethnic groups, 2 sexes and 85 age groups, a total of 680 cells of data were employed for each county. In counties with small populations in which either the baseline population used as the denominator to compute rates and/or the number of events used in the numerator (i.e., births or net migrants) was too small to produce reliable and reasonable rates, it was necessary to develop a means of obtaining reasonable rates.

In order to obtain reasonable rates for counties for which problems were identified, rates for larger groupings of areas with characteristics similar to the counties for which alternative rates were necessary were used to develop homogenous groupings of areas. Council of Government Regions and county types within regions were used. All counties within Council of Government (COG) regions were thus divided into four groups--metropolitan central city counties, metropolitan suburban counties, nonmetropolitan counties that are adjacent to metropolitan counties, and nonmetropolitan counties that are not adjacent to metropolitan counties. The rates for these groupings were used because analyses across time have indicated that the rates for these 4 types show substantial homogeneity across areas within each grouping but substantial differences among the groupings. Rates were completed for each of these four county types within each region and for the four types for the State as a whole (by using the aggregate populations of counties within each type within each region and/or the total State population by type).

For counties with problematic rates, rates for the county type of which the county was a member for the COG region where the county was located were substituted only for the problematic

rates for those age, sex, and race/ethnicity groups for which the rates computed with the county's own population data were deemed to be problematic. For a few regions for a few racial/ethnic groups, even the COG rates were problematic. In such cases, the State rate for the county type was substituted for the county rate. Finally, in a very few cases even the state-level status was not acceptable and the overall state rate for the racial/ethnic group was used. It is important to stress that this procedure does not result in the rates for all age and sex groups for a given racial/ethnic group being replaced by regional or State averages. Rather, replacements are made for only those rates for age, sex, and racial/ethnic cohorts within counties which had problematic values. Thus, county-level differentials in demographic patterns are maintained in the population projections.
Counties were deemed to have unreasonable age-specific fertility rates if they exceeded the mean rates for an age race/ethnicity group for the county type of which they were a part by more than two standard deviations or were greater than 25 percent for any single year for any age, sex and race/ethnicity group. State-level age specific fertility rates for the county types were used for substitutions for fertility because of instability even in COG level rates. In addition, data on the fertility levels of women in the Other group indicated that only a few counties had age-specific rates that were sufficiently stable to be used in the projections. For all other counties, the age and race/ethnicity specific rates used for the Other racial/ethnic group were the State-level age, sex and race/ethnicity specific rates for the Other race/ethnicity group.

Migration rates are more variable across areas such that the use of means was not possible and would have improperly altered rates for rapidly and slow growing areas. Limits were used instead of statistical means. These limits were based on the upper and lower limits seen as feasible for migration. Unreasonable migration rates were designated as those in which per-person-per-year rates were 0.10 or greater (a rate that allows up to 10% migration per single-year age group per year). Since migration rates can have either positive or negative values, this allowed migration rates to vary between □0.10 and 0.10 per-person-per-year for each age, sex and race/ethnicity cohort. The counties identified as having problematic fertility and/or migration rates were largely nonmetropolitan, most with relatively small populations.

Although the procedure described above was generally adequate for rate adjustments, for some counties the migration rates were problematic in yet another manner. The use of historical rates often resulted in substantially higher rates of net migration for one sex than the other. Such an imbalance cannot be expected to continue over the entire projection period. The ratio of male rates relative to female rates for each age was examined by computing means for each ratio and analyzing standard deviations for such means. From this analysis, it was decided that a ratio greater than 2 should result in a replacement of the migration rate. Given this, rates were adjusted to be no larger than twice the ratio of male to female rates or visa versa at the COG and State levels within county types for the same age, sex, and race/ethnicity group (i.e., metropolitan central city, metropolitan suburban, nonmetropolitan adjacent, and nonmetropolitan nonadjacent). If the ratio of male to female migration rates for a county of a given type for any age exceeded this limit for the COG type, its rate for that age, sex, and race/ethnicity was replaced with that for the county type for the COG. If the COG's rate for the

county type was still problematic, the rate for that county type for the State as a whole was substituted for the county rate. Again, as for fertility and mortality rates, for a very few rates for a few areas even state-level county-type specific rates were unacceptable and state-level rates by age, sex, and race/ethnicity were used. The use of this procedure resulted in substantially more balanced sex ratios in the final projections.

The Computation and Selection of Future Projection Scenarios

In this section, both the assumptions underlying the projection scenarios and the final computational procedures are described. For both, the emphasis is placed on the logic underlying the scenarios and procedures rather than on the detailed computational processes. Those interested in greater detail may consult several readily available references on the subject (Murdock et al., l987; Pittenger, 1976; Murdock and Ellis, 1991; Smith, Tayman and Swanson, 2001) or may contact the personnel involved in the Projection Program in the State Demographer's Office in the Institute for Demographic and Socioeconomic Research at the University of Texas at San Antonio.

The Projection Scenarios

Three projection scenarios which produce three alternative sets of population values for the State and each county are presented in these projections. These scenarios assume the same set of mortality and fertility assumptions in each scenario but differ in their assumptions relative to net migration. The net migration assumptions made for two scenarios are derived from 2000-2010 patterns which have been altered relative to expected future population trends. This is done by systematically and uniformly altering the adjusted (as noted above) 2000-2010 net migration rates by age, sex and race/ethnicity. The scenarios so produced are referred to as the zero migration (0.0) scenario, the one-half 2000-2010 (0.5) scenario, and the 2000-2010 (1.0) scenario.

The Zero Migration (0.0) Scenario

The zero scenario assumes that inmigration and outmigration are equal (i.e., net migration is zero) resulting in growth only through natural increase (the excess or deficit of births relative to deaths). This scenario is commonly used as a base in population projections and is useful in indicating what an area's indigenous growth (growth due only to natural increase) will be over time. In general, this scenario produces the lowest population projection for counties with historical patterns of population growth through net inmigration and the highest population projection for counties with historical patterns of population decline through net outmigration.

The One-Half 2000-2010 Migration (0.5) Scenario

This scenario has been prepared as an approximate average of the zero (0.0) and 2000-2010 (1.0) scenarios. It assumes rates of net migration one-half of those of the post-2000 decade. The reason for including this scenario is that many counties in the State are unlikely to continue to experience the overall levels of relative extensive growth of the 2000 to 2010 decade. This scenario projects rates of population growth that are slower than 2000-2010 changes, but with steady growth.

The 2000-2010 Migration (1.0) Scenario

The 2000-2010 scenario assumes that the trends in the age, sex and race/ethnicity net migration rates of the post-2000 decade will characterize those occurring in the future of Texas. The 2000 to 2010 period was characterized by rapid growth in many areas of the state. It is seen here as the high growth alternative because it's overall total decade pattern is one of substantial growth (i.e., 20.6% for the 2000-2010 decade for the State). Because growth was so extensive during the 2000-2010 decade it is likely to be unsustainable over time and thus this scenario is presented here as a high growth alternative. For counties that experienced net outmigration during the 2000 to 2010 period, this scenario produces continued decline.

Computation of Future Populations

Given the projected rates and scenarios noted above, the computation of the projected population was completed using standard cohort-component techniques as described above with all computations being completed on an individual year and age basis for each sex and racial/ethnic group. Base population values for 2010 were used as the starting values and populations were projected for each year from 2011-2050. Because of the need to ensure that the sum of county projections produces reasonable future populations for the State as a whole, the State's future population by age, sex and race/ethnicity was first independently projected under each of the scenarios described above. County base cohorts were projected to the projection date and projected special populations added to the projected base populations for the appropriate counties. Projected populations of colleges and universities for future years were taken from projections by the Texas Higher Education Coordinating Board (2013), values for existing prison populations and correspondence concerning plans for future prison facilities were acquired as of August 2014 from the Texas Department of Criminal Justice. All other institutions were maintained at 2010 levels as indicated in the 2000 Census. The State-level projections were then used as control totals for the sum of county projections for each age, sex and racial/ethnic group. The projections so produced and controlled for each scenario are those provided here as projections of the population of the State and of each county in the State.

Recommended Scenario

Many users want to know which projection scenario to use for various forms of analysis and thus we generally recommend a specific scenario for use in most counties. At the same time, it is important to note that other scenarios may be more appropriate for a given county for a given period of time.

Recent estimates of Texas population for July 1, 2012 show Texas to be continuing to grow at rates very similar to those from 2000 to 2010 but also showing a continuation of regional patterns of variation in rates of growth in Texas. Despite this we believe that the 0.5 scenario continues to be the most appropriate scenario for most counties for use in long-term planning. For planning for the next 5-10 years the 1.0 scenario may be more appropriate. The rationales for these recommendations are presented below.

The 2000 to 2010 period was one of expansive growth in the Texas economy and population. A general slowdown in the U.S. and Texas economies occurred in the later part of the 2000 to 2010 decade but the most recent data suggest that Texas economy and population are again showing substantial growth. Despite this it is important to remember that although the scenarios use trends in births and deaths, they assume constant levels of migration. Such an assumption is used because of the lack of historical data of sufficient specificity to trend these rates over time. Our analyses of such rates suggest that it is unlikely that such trends (especially in some key groups) will continue at the level of the 2000-2010 period for the next 40 years and thus using the 0.5 scenario assumes continued growth but at reduced levels. In addition, the overall direction of trends and differences among racial/ethnic groups seem likely to continue suggesting the need for the use of a scenario that is based on 2000-2010 trends in migration but shows slower growth. This is the 0.5 scenario.

For those doing short term planning of 5-10 years the use of 1.0 scenario projections may be appropriate with the provision that the user constantly monitor trends for indications of sudden declines in growth rates.

Changes and Corrections to Previous Projections

The population projections presented here, include certain changes and corrections to the data and calculations used in the process. While the projections presented in the 0.0. 0.5 and 1.0 Scenarios typically do not change substantially due to biennial updates, the 2014 revisions include population projections that are quite different from those that were released in 2012 for some counties and subcategories.

As discussed in an earlier section, for this current set of projections baseline rates for fertility and mortality were developed based on births for 2009-2011 and deaths 2009-2011. In the set of projections, produced in 2012, baseline rates for fertility and mortality were developed based on births for 2007-2010 and deaths for 2009-2010.

We normally use three year average of births and deaths to calculate fertility and survival rates. Since the 2011 vital statistics data were not available to use in projections produced in 2012, earlier years of data were utilized. Also, birth data for 2007-2010 were used for the 2012 projections because, at that time, we were not sure whether the decline in births was temporary (due to the effect of the recent recession) or an actual trend in declining birth rates. The 2011 and 2012 data suggest there is a genuine trend of decreasing birth rates, particularly for Hispanic population. Death data are not impacted in a similar manner by economic conditions; rates were more stable from year to year for this indicator in 2012 and remain stable for the 2014 projections.

In the course of updating the rates discussed above, an inconsistency was discovered in the distribution of cohorts into race/ethnicity groups due to changes in reported records for births and deaths. Persons who indicated their race/ethnicity as non-Hispanic and "Some Other Race" should have been allocated to the "Other" category for projection purposes, but in the 2012 projection model some of them were incorrectly proportioned to the Anglo and Black groups. This problem was corrected for these 2014 population projections.

While adjustments to birth and death rates affected the population change somewhat over the course of the 2011-2050 population projections, migration rates were also influenced. Migration is calculated as a residual value after births are added to the 2000 population count and deaths are subtracted (for each cohort), then the remaining population change between 2000 and 2010 is due to migration.

While the changes and corrections discussed above have resulted in notable revisions for some areas, these updates are all expected to improve the accuracy of the population projections. As always, the population changes attributed to these projections involve assumptions based on records of historical trends and may not accurately reflect the future population in any given area or population sub-group. Since it is not possible to monitor events in all 254 Counties in Texas and methods must be applied equitably to all areas for consistency, the various scenarios are provided to allow local and regional variability in expected population change.

Data Available from the Projections

This document describes the population projection methodology and provides several appendices showing the base populations for the State for 2010, and the base rates for fertility, mortality and migration for the State.

The data produced in the process of completing the projections and the data summarizing the projections themselves are extensive. The amount of data available for the State and each of 254 counties for three scenarios of growth, for each year from 2010 through 2050 for each of 86 age groups for 2 sexes and 4 racial/ethnic groups is voluminous. Thus, data are provided in several different forms to address the needs of different user groups. Because of the volume of data, printed data are provided only on request.

The fully detailed projections of the population in each age, sex and racial/ethnic group for each year from 2010 through 2050 are available in electronic forms for the State and all counties in the State.

E-mail: txsdc@utsa.edu
URL: http://txsdc.utsa.edu/

All data are available free on the web site provided above and may be requested in additional formats on a cost-recovery basis.

If you have any questions concerning these projections, please contact:

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Appendices

Appendix A:	Baseline Population by Age, Sex and Race/Ethnicity for 2010 for the State of Texas
Appendix B:	Baseline Survival Rates by Age, Sex and Race/Ethnicity for 2009-2011 for the State of Texas
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Appendix A

Baseline Population by Age, Sex and
Race/Ethnicity for 2010 for the
State of Texas

Appendix A: Baseline Population by Age, Sex and Race/Ethnicity for 2010 for the State of Texas

	Total			Anglo			Black			Hispanic			Other		
Age	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
0	379,846	193,489	186,357	118,888	61,193	57,695	41,869	21,109	20,760	194,215	98,489	95,726	24,874	12,698	12,176
1	381,345	194,442	186,903	120,211	61,473	58,738	42,664	21,614	21,050	193,805	98,784	95,021	24,665	12,571	12,094
2	390,119	199,274	190,845	122,905	63,020	59,885	43,834	22,307	21,527	197,746	100,851	96,895	25,634	13,096	12,538
3	390,262	199,391	190,871	124,127	63,696	60,431	44,242	22,703	21,539	197,114	100,382	96,732	24,779	12,610	12,169
4	386,901	197,553	189,348	124,347	64,076	60,271	43,936	22,124	21,812	193,791	98,751	95,040	24,827	12,602	12,225
5	387,454	197,737	189,717	125,551	64,311	61,240	43,689	22,090	21,599	193,356	98,782	94,574	24,858	12,554	12,304
6	385,858	196,739	189,119	127,061	65,125	61,936	43,755	22,176	21,579	190,348	96,980	93,368	24,694	12,458	12,236
7	383,648	195,275	188,373	127,822	65,504	62,318	43,655	22,185	21,470	188,121	95,522	92,599	24,050	12,064	11,986
8	382,494	195,598	186,896	128,080	65,740	62,340	44,416	22,724	21,692	186,922	95,413	91,509	23,076	11,721	11,355
9	388,780	198,465	190,315	131,492	67,576	63,916	45,116	23,132	21,984	188,375	95,651	92,724	23,797	12,106	11,691
10	387,307	198,055	189,252	132,888	68,359	64,529	46,137	23,515	22,622	185,587	94,678	90,909	22,695	11,503	11,192
11	377,604	193,118	184,486	131,988	67,761	64,227	44,989	23,056	21,933	178,941	91,318	87,623	21,686	10,983	10,703
12	373,651	191,498	182,153	131,368	67,791	63,577	45,274	23,181	22,093	175,314	89,557	85,757	21,695	10,969	10,726
13	372,194	190,088	182,106	133,105	68,280	64,825	45,314	23,036	22,278	172,295	87,981	84,314	21,480	10,791	10,689
14	371,127	190,107	181,020	133,412	68,483	64,929	45,470	23,412	22,058	171,245	87,551	83,694	21,000	10,661	10,339
15	371,716	190,560	181,156	134,187	68,926	65,261	47,170	24,086	23,084	169,963	87,137	82,826	20,396	10,411	9,985
16	376,128	193,381	182,747	136,676	70,222	66,454	48,663	25,035	23,628	170,199	87,612	82,587	20,590	10,512	10,078
17	379,390	195,479	183,911	138,553	71,489	67,064	50,350	25,889	24,461	170,440	87,839	82,601	20,047	10,262	9,785
18	380,018	196,100	183,918	140,517	72,635	67,882	49,738	25,528	24,210	169,848	87,742	82,106	19,915	10,195	9,720
19	375,872	193,166	182,706	141,283	72,595	68,688	49,510	24,918	24,592	165,243	85,492	79,751	19,836	10,161	9,675
20	369,040	189,570	179,470	140,814	71,950	68,864	47,803	23,930	23,873	160,475	83,497	76,978	19,948	10,193	9,755
21	359,015	184,652	174,363	139,215	70,793	68,422	45,382	22,729	22,653	154,073	80,617	73,456	20,345	10,513	9,832
22	358,639	184,539	174,100	140,396	71,228	69,168	43,837	21,672	22,165	154,045	81,283	72,762	20,361	10,356	10,005
23	362,244	185,552	176,692	144,111	72,740	71,371	43,343	21,386	21,957	154,085	81,113	72,972	20,705	10,313	10,392
24	368,141	188,040	180,101	148,137	74,533	73,604	43,824	21,592	22,232	154,599	81,068	73,531	21,581	10,847	10,734
25	370,565	189,116	181,449	150,642	76,168	74,474	43,351	21,406	21,945	154,438	80,465	73,973	22,134	11,077	11,057
26	364,179	184,952	179,227	146,805	74,070	72,735	42,564	20,693	21,871	151,923	78,988	72,935	22,887	11,201	11,686
27	374,510	190,106	184,404	150,703	76,114	74,589	43,754	21,259	22,495	156,567	81,368	75,199	23,486	11,365	12,121
28	370,704	187,076	183,628	149,192	74,944	74,248	43,245	20,922	22,323	155,081	80,270	74,811	23,186	10,940	12,246
29	373,081	187,716	185,365	149,781	75,706	74,075	44,471	21,296	23,175	155,992	80,005	75,987	22,837	10,709	12,128
30	374,101	188,810	185,291	148,953	75,317	73,636	45,415	21,700	23,715	156,464	80,793	75,671	23,269	11,000	12,269
31	348,438	175,098	173,340	139,257	70,462	68,795	42,370	20,252	22,118	144,392	73,875	70,517	22,419	10,509	11,910
32	349,119	174,780	174,339	138,974	69,718	69,256	41,000	19,507	21,493	146,904	75,053	71,851	22,241	10,502	11,739
33	344,434	172,346	172,088	135,618	68,309	67,309	40,436	19,297	21,139	146,019	74,086	71,933	22,361	10,654	11,707
34	344,342	171,853	172,489	134,268	67,804	66,464	39,922	18,787	21,135	146,704	74,080	72,624	23,448	11,182	12,266

Appendix A, continued

	Total			Anglo			Black			Hispanic			Other		
Age	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
35	350,077	174,811	175,266	138,340	69,655	68,685	40,216	19,218	20,998	147,599	74,534	73,065	23,922	11,404	12,518
36	339,517	168,106	171,411	134,348	67,313	67,035	40,303	19,151	21,152	141,230	70,430	70,800	23,636	11,212	12,424
37	347,198	172,525	174,673	139,689	70,509	69,180	41,855	19,788	22,067	141,529	70,675	70,854	24,125	11,553	12,572
38	357,703	177,356	180,347	151,122	76,100	75,022	42,814	20,424	22,390	139,892	69,486	70,406	23,875	11,346	12,529
39	369,092	183,341	185,751	163,370	82,221	81,149	44,728	21,288	23,440	136,984	68,235	68,749	24,010	11,597	12,413
40	363,806	181,241	182,565	161,793	81,496	80,297	42,702	20,333	22,369	135,979	68,243	67,736	23,332	11,169	12,163
41	339,268	169,596	169,672	152,302	76,623	75,679	39,655	19,135	20,520	125,527	63,174	62,353	21,784	10,664	11,120
42	331,749	165,809	165,940	147,826	74,797	73,029	40,452	19,503	20,949	123,218	61,692	61,526	20,253	9,817	10,436
43	327,499	163,863	163,636	148,987	75,155	73,832	40,356	19,401	20,955	119,104	60,018	59,086	19,052	9,289	9,763
44	332,473	166,356	166,117	152,269	76,180	76,089	42,031	20,164	21,867	118,889	60,492	58,397	19,284	9,520	9,764
45	351,753	175,194	176,559	168,090	84,045	84,045	44,312	21,088	23,224	119,897	60,567	59,330	19,454	9,494	9,960
46	351,530	175,009	176,521	175,089	87,357	87,732	42,832	20,385	22,447	113,986	57,607	56,379	19,623	9,660	9,963
47	354,538	176,162	178,376	180,229	89,750	90,479	42,873	20,480	22,393	111,969	56,404	55,565	19,467	9,528	9,939
48	349,684	173,713	175,971	182,656	90,920	91,736	42,407	20,247	22,160	106,989	54,002	52,987	17,632	8,544	9,088
49	352,962	174,785	178,177	186,835	93,028	93,807	42,984	20,528	22,456	105,191	52,658	52,533	17,952	8,571	9,381
50	354,587	176,947	177,640	190,419	95,212	95,207	42,940	20,868	22,072	103,613	52,408	51,205	17,615	8,459	9,156
51	336,806	166,764	170,042	184,391	91,987	92,404	41,140	19,659	21,481	94,716	47,330	47,386	16,559	7,788	8,771
52	337,715	167,008	170,707	188,003	93,704	94,299	40,208	19,189	21,019	92,888	46,137	46,751	16,616	7,978	8,638
53	327,317	160,811	166,506	183,375	90,943	92,432	39,155	18,630	20,525	88,489	43,624	44,865	16,298	7,614	8,684
54	318,444	156,403	162,041	179,392	88,684	90,708	37,914	18,162	19,752	85,250	41,969	43,281	15,888	7,588	8,300
55	312,964	153,282	159,682	179,832	89,059	90,773	36,473	17,287	19,186	81,345	39,717	41,628	15,314	7,219	8,095
56	294,080	142,786	151,294	172,073	84,351	87,722	32,886	15,343	17,543	74,954	36,399	38,555	14,167	6,693	7,474
57	285,987	139,183	146,804	168,757	83,150	85,607	31,687	14,851	16,836	71,352	34,608	36,744	14,191	6,574	7,617
58	270,393	130,846	139,547	162,035	79,532	82,503	29,854	13,681	16,173	65,668	31,737	33,931	12,836	5,896	6,940
59	259,500	125,178	134,322	152,870	74,826	78,044	29,051	13,359	15,692	64,721	31,139	33,582	12,858	5,854	7,004
60	255,728	123,226	132,502	153,745	75,332	78,413	27,277	12,494	14,783	61,961	29,553	32,408	12,745	5,847	6,898
61	244,795	117,864	126,931	149,888	73,191	76,697	25,606	11,736	13,870	57,571	27,475	30,096	11,730	5,462	6,268
62	247,109	119,255	127,854	156,636	76,728	79,908	24,006	11,142	12,864	55,391	26,245	29,146	11,076	5,140	5,936
63	240,071	115,718	124,353	156,443	76,741	79,702	21,430	9,801	11,629	51,929	24,454	27,475	10,269	4,722	5,547
64	187,064	89,757	97,307	115,149	56,444	58,705	17,796	8,005	9,791	45,540	21,239	24,301	8,579	4,069	4,510
65	189,295	90,003	99,292	119,733	57,901	61,832	17,562	7,737	9,825	43,511	20,390	23,121	8,489	3,975	4,514
66	183,767	87,152	96,615	120,421	58,274	62,147	16,120	7,060	9,060	39,640	18,246	21,394	7,586	3,572	4,014
67	175,566	83,253	92,313	115,972	56,072	59,900	15,600	6,993	8,607	36,669	16,664	20,005	7,325	3,524	3,801
68	157,068	74,203	82,865	103,429	49,939	53,490	13,953	6,096	7,857	33,088	15,003	18,085	6,598	3,165	3,433

Appendix A, continued

	Total			Anglo			Black			Hispanic			Other		
Age	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
69	147,404	68,658	78,746	96,608	45,987	50,621	13,289	5,669	7,620	31,490	14,156	17,334	6,017	2,846	3,171
70	137,382	64,010	73,372	89,567	42,478	47,089	12,253	5,226	7,027	29,911	13,637	16,274	5,651	2,669	2,982
71	129,618	60,091	69,527	85,998	40,692	45,306	11,058	4,860	6,198	27,454	12,146	15,308	5,108	2,393	2,715
72	124,292	56,938	67,354	82,180	38,496	43,684	10,493	4,355	6,138	26,773	11,751	15,022	4,846	2,336	2,510
73	115,473	52,528	62,945	76,158	35,540	40,618	9,988	4,085	5,903	24,936	10,885	14,051	4,391	2,018	2,373
74	112,391	50,298	62,093	74,802	34,477	40,325	9,401	3,779	5,622	24,103	10,227	13,876	4,085	1,815	2,270
75	108,852	48,608	60,244	72,907	33,247	39,660	9,326	3,792	5,534	23,076	9,924	13,152	3,543	1,645	1,898
76	98,115	43,358	54,757	66,067	29,843	36,224	8,390	3,355	5,035	20,431	8,711	11,720	3,227	1,449	1,778
77	94,054	40,822	53,232	64,277	28,684	35,593	8,055	3,075	4,980	18,663	7,735	10,928	3,059	1,328	1,731
78	89,693	38,875	50,818	61,765	27,416	34,349	6,978	2,677	4,301	18,300	7,656	10,644	2,650	1,126	1,524
79	86,531	36,867	49,664	60,050	26,223	33,827	6,626	2,494	4,132	17,213	7,053	10,160	2,642	1,097	1,545
80	82,629	34,296	48,333	57,112	24,310	32,802	6,448	2,327	4,121	16,671	6,669	10,002	2,398	990	1,408
81	74,181	30,409	43,772	52,163	21,884	30,279	5,690	1,996	3,694	14,433	5,721	8,712	1,895	808	1,087
82	68,453	27,318	41,135	48,157	19,620	28,537	5,065	1,733	3,332	13,452	5,239	8,213	1,779	726	1,053
83	63,660	24,968	38,692	45,236	17,972	27,264	4,641	1,578	3,063	12,136	4,775	7,361	1,647	643	1,004
84	58,283	22,038	36,245	41,791	16,073	25,718	4,312	1,382	2,930	10,785	4,061	6,724	1,395	522	873
85	305,179	100,971	204,208	225,672	74,374	151,298	23,126	6,553	16,573	50,186	17,780	32,406	6,195	2,264	3,931
Total Population	25,145,561	12,472,280	12,673,281	11,397,345	5,632,646	5,764,699	2,886,825	1,392,410	1,494,415	9,460,921	4,763, 753	4,697,168	1,400,470	683,471	716,999

Appendix B

Baseline Survival Rates by Age, Sex and Race/Ethnicity for 2009-2011 for the State of Texas

Appendix B: Baseline Survival Rates by Age, Sex, and Race/Ethnicity for 2009-2011 for the State of Texas

	Anglo		Black		Hispanic		Other	
Age	Male	Female	Male	Female	Male	Female	Male	Female
0	0.9956000	0.9961800	0.9902200	0.9925900	0.9958800	0.9965800	0.9975473	0.9973891
1	0.9996098	0.9995368	0.9991390	0.9993162	0.9995369	0.9995255	0.9998270	0.9999484
2	0.9997056	0.9997083	0.9996622	0.9996375	0.9996780	0.9997308	0.9998023	0.9997891
3	0.9996475	0.9997907	0.9995860	0.9998049	0.9997912	0.9997989	0.9998089	0.9999055
4	0.9997381	0.9998189	0.9996413	0.9999287	0.9998297	0.9998391	0.9998793	0.9999256
5	0.9997985	0.9998828	0.9997974	0.9998284	0.9998490	0.9999083	0.9998793	0.9999231
6	0.9998488	0.9998792	0.9998342	0.9997671	0.9998892	0.9999186	0.9998720	0.9999196
7	0.9998790	0.9999094	0.9998708	0.9998900	0.9999093	0.9998995	0.9999897	0.9999196
8	0.9998896	0.9998993	0.9998431	0.9998803	0.9998993	0.9998893	0.9999386	0.9999866
9	0.9998790	0.9999295	0.9998677	0.9998379	0.9998993	0.9998893	0.9998842	0.9998694
10	0.9998790	0.9999295	0.9998270	0.9998737	0.9999093	0.9998994	0.9998827	0.9999856
11	0.9998722	0.9999194	0.9997557	0.9998885	0.9998992	0.9999094	0.9998257	0.9999095
12	0.9998285	0.9998743	0.9997862	0.9998378	0.9998690	0.9999094	0.9998691	0.9999095
13	0.9998184	0.9998388	0.9998065	0.9997567	0.9998488	0.9998993	0.9998590	0.9999095
14	0.9997881	0.9998187	0.9997454	0.9998634	0.9997984	0.9998691	0.9998778	0.9999649
15	0.9997073	0.9997783	0.9996842	0.9997659	0.9997479	0.9998490	0.9998590	0.9998492
16	0.9995558	0.9997178	0.9995313	0.9997464	0.9996369	0.9998187	0.9998086	0.9998491
17	0.9994041	0.9996371	0.9993272	0.9997463	0.9994350	0.9997482	0.9996070	0.9997988
18	0.9991511	0.9995966	0.9991431	0.9996752	0.9991824	0.9997179	0.9994153	0.9997988
19	0.9988267	0.9995460	0.9988360	0.9996243	0.9989998	0.9996574	0.9997280	0.9998542
20	0.9987389	0.9995578	0.9985689	0.9995429	0.9989887	0.9996603	0.9994393	0.9998490
21	0.9987592	0.9994821	0.9984747	0.9993801	0.9989067	0.9996067	0.9995102	0.9996980
22	0.9987564	0.9996277	0.9985237	0.9992373	0.9988856	0.9996793	0.9995393	0.9996476
23	0.9988786	0.9995632	0.9984701	0.9993487	0.9989831	0.9996242	0.9996499	0.9997079
24	0.9988341	0.9995845	0.9983238	0.9994262	0.9988524	0.9996576	0.9993484	0.9997582
25	0.9989736	0.9994364	0.9983519	0.9991848	0.9989883	0.9996966	0.9992610	0.9996876
26	0.9989470	0.9994563	0.9981944	0.9991331	0.9989411	0.9996141	0.9992449	0.9998542
27	0.9989709	0.9994163	0.9981395	0.9992345	0.9990237	0.9996097	0.9994539	0.9996862
28	0.9987625	0.9994982	0.9982189	0.9992135	0.9988572	0.9996596	0.9994875	0.9996800
29	0.9986773	0.9992999	0.9981327	0.9991004	0.9988661	0.9996142	0.9996870	0.9996770
30	0.9988847	0.9994091	0.9980461	0.9990689	0.9989467	0.9996052	0.9993473	0.9997889

Appendix B, continued

	Anglo		Black		Hispanic		Other	
Age	Male	Female	Male	Female	Male	Female	Male	Female
31	0.9987652	0.9993657	0.9978236	0.9988723	0.9990768	0.9996378	0.9995658	0.9996667
32	0.9988361	0.9992522	0.9984850	0.9986978	0.9988820	0.9995130	0.9993955	0.9998016
33	0.9986032	0.9992615	0.9980232	0.9987897	0.9987892	0.9995215	0.9995218	0.9994940
34	0.9985466	0.9991148	0.9978984	0.9985544	0.9988419	0.9994827	0.9991111	0.9998786
35	0.9983432	0.9990788	0.9977839	0.9985789	0.9987142	0.9994480	0.9990668	0.9997478
36	0.9982160	0.9989590	0.9978422	0.9986183	0.9986733	0.9993096	0.9995934	0.9993522
37	0.9982128	0.9988818	0.9975316	0.9982754	0.9985870	0.9993294	0.9992966	0.9994024
38	0.9981679	0.9989573	0.9973457	0.9982436	0.9985437	0.9993391	0.9994634	0.9997921
39	0.9979769	0.9987957	0.9972008	0.9982692	0.9984027	0.9993086	0.9990006	0.9998602
40	0.9978056	0.9986465	0.9970441	0.9980794	0.9983113	0.9991753	0.9992523	0.9995072
41	0.9976437	0.9984907	0.9969393	0.9976908	0.9983188	0.9990288	0.9988024	0.9994010
42	0.9974911	0.9984801	0.9966518	0.9974978	0.9981081	0.9989585	0.9989142	0.9993992
43	0.9972322	0.9983247	0.9961468	0.9971675	0.9977921	0.9988053	0.9985410	0.9992071
44	0.9969396	0.9981546	0.9958410	0.9971909	0.9975158	0.9986301	0.9989384	0.9992323
45	0.9966656	0.9980170	0.9956722	0.9971514	0.9973840	0.9985433	0.9991606	0.9991953
46	0.9964102	0.9979715	0.9952622	0.9968060	0.9971464	0.9984417	0.9984125	0.9991483
47	0.9960348	0.9977773	0.9944644	0.9965737	0.9966963	0.9982236	0.9980917	0.9989313
48	0.9955589	0.9977580	0.9938737	0.9958297	0.9964320	0.9982268	0.9984227	0.9991050
49	0.9951736	0.9974199	0.9935929	0.9952795	0.9962391	0.9978974	0.9981433	0.9985463
50	0.9948262	0.9972404	0.9929956	0.9951393	0.9958315	0.9978017	0.9976960	0.9988956
51	0.9946040	0.9969180	0.9922744	0.9945845	0.9952160	0.9975880	0.9967443	0.9988871
52	0.9938857	0.9967225	0.9914357	0.9938447	0.9947791	0.9973642	0.9983974	0.9984071
53	0.9935778	0.9962733	0.9911114	0.9933821	0.9942274	0.9970972	0.9968602	0.9983377
54	0.9937270	0.9965315	0.9900326	0.9930641	0.9941931	0.9968278	0.9975543	0.9986313
55	0.9933969	0.9956707	0.9887028	0.9924572	0.9934912	0.9964932	0.9974621	0.9986214
56	0.9918406	0.9948705	0.9874475	0.9915377	0.9929319	0.9962918	0.9961665	0.9977920
57	0.9913794	0.9945312	0.9853514	0.9915215	0.9921160	0.9959722	0.9953844	0.9976266
58	0.9909712	0.9941936	0.9845670	0.9907591	0.9912839	0.9952996	0.9949467	0.9973092
59	0.9901907	0.9936504	0.9834189	0.9895997	0.9909033	0.9947668	0.9940602	0.9969255
60	0.9887529	0.9932475	0.9819687	0.9890751	0.9899165	0.9942795	0.9936073	0.9970524

Appendix B, continued

	Anglo		Black		Hispanic		Other	
Age	Male	Female	Male	Female	Male	Female	Male	Female
61	0.9881643	0.9928147	0.9815996	0.9888845	0.9891762	0.9936121	0.9934319	0.9967912
62	0.9874368	0.9922283	0.9805958	0.9881226	0.9889534	0.9930949	0.9946065	0.9961033
63	0.9870227	0.9917298	0.9786309	0.9870011	0.9877622	0.9925891	0.9947443	0.9956647
64	0.9849143	0.9900880	0.9760642	0.9850521	0.9863990	0.9915456	0.9949896	0.9954542
65	0.9830893	0.9888803	0.9736704	0.9843587	0.9853203	0.9908977	0.9919438	0.9944709
66	0.9828870	0.9887321	0.9715136	0.9836736	0.9844416	0.9901324	0.9915678	0.9939025
67	0.9818158	0.9877621	0.9715677	0.9820460	0.9835998	0.9893005	0.9928591	0.9934864
68	0.9800221	0.9863680	0.9703605	0.9813820	0.9819161	0.9887170	0.9917216	0.9941752
69	0.9780209	0.9853758	0.9682179	0.9792133	0.9807900	0.9876767	0.9886066	0.9926085
70	0.9758426	0.9841969	0.9659287	0.9771060	0.9798238	0.9871140	0.9880752	0.9908962
71	0.9738131	0.9822979	0.9624448	0.9746721	0.9774950	0.9862120	0.9863763	0.9911153
72	0.9721145	0.9809085	0.9595189	0.9721094	0.9760598	0.9845192	0.9850293	0.9887325
73	0.9688538	0.9791247	0.9551608	0.9712656	0.9732428	0.9830690	0.9866016	0.9890574
74	0.9658634	0.9769357	0.9546682	0.9688018	0.9706772	0.9815251	0.9831598	0.9867949
75	0.9638965	0.9743645	0.9539885	0.9662395	0.9681585	0.9791056	0.9813402	0.9848970
76	0.9595365	0.9708386	0.9478170	0.9649322	0.9646121	0.9760922	0.9791606	0.9820048
77	0.9546615	0.9678628	0.9414039	0.9629630	0.9605004	0.9732331	0.9764619	0.9830873
78	0.9513959	0.9646114	0.9350805	0.9570378	0.9558806	0.9700929	0.9716570	0.9838036
79	0.9469327	0.9603191	0.9330899	0.9514117	0.9526497	0.9660628	0.9690530	0.9778204
80	0.9409316	0.9575084	0.9305394	0.9502886	0.9494239	0.9634358	0.9660952	0.9743096
81	0.9342815	0.9530444	0.9207513	0.9457426	0.9430163	0.9597316	0.9596564	0.9678134
82	0.9265326	0.9455977	0.9157511	0.9399009	0.9379288	0.9537986	0.9554640	0.9719326
83	0.9200958	0.9391116	0.9132911	0.9336013	0.9346650	0.9480086	0.9548858	0.9627919
84	0.9129707	0.9332500	0.9040626	0.9284245	0.9265091	0.9418282	0.9434830	0.9605643
85	0.8583446	0.8734649	0.8578408	0.8755791	0.8811147	0.8934769	0.9215418	0.9411037

Appendix C

Baseline Fertility Rates by Age, Sex
and Race/Ethnicity for 2009-2011
for the State of Texas

Appendix C: Baseline Fertility Rates by Age, Sex and Race/Ethnicity for 2009-2011 for the State of Texas

Age	Anglo	Black	Hispanic	Other
10	0.0000074	0.0000546	0.0000575	0.0000074
11	0.0000074	0.0000152	0.0000114	0.0000303
12	0.0000052	0.0000754	0.0000661	0.0002037
13	0.0001440	0.0011074	0.0008817	0.0000624
14	0.0008677	0.0044434	0.0050344	0.0011937
15	0.0038569	0.0127234	0.0185216	0.0034073
16	0.0111421	0.0265964	0.0431363	0.0081419
17	0.0234585	0.0441989	0.0735053	0.0143170
18	0.0438126	0.0744286	0.1038420	0.0227172
19	0.0665324	0.1050487	0.1340358	0.0344757
20	0.0776228	0.1254590	0.1441170	0.0424676
21	0.0828261	0.1313768	0.1510724	0.0473595
22	0.0882517	0.1274107	0.1508594	0.0541751
23	0.0900165	0.1226507	0.1490776	0.0586091
24	0.0919192	0.1141006	0.1436466	0.0688297
25	0.0978958	0.1077388	0.1422385	0.0777695
26	0.1080008	0.1047194	0.1404465	0.0883973
27	0.1118106	0.0957827	0.1328580	0.1023414
28	0.1167378	0.0955500	0.1271217	0.1130089
29	0.1157233	0.0875634	0.1199119	0.1257421
30	0.1113788	0.0789765	0.1112718	0.1279672
31	0.1101543	0.0745499	0.1088912	0.1318805
32	0.0974686	0.0681247	0.0977994	0.1237430
33	0.0868555	0.0603707	0.0872425	0.1160181
34	0.0767541	0.0526372	0.0779117	0.0973245
35	0.0632396	0.0476937	0.0669617	0.0870251
36	0.0513983	0.0383941	0.0581241	0.0755754
37	0.0401714	0.0300944	0.0467885	0.0588200
38	0.0311286	0.0256251	0.0382797	0.0474411
39	0.0227104	0.0197269	0.0298151	0.0352012
40	0.0163416	0.0141883	0.0220572	0.0252022
41	0.0115548	0.0097804	0.0160331	0.0180574
42	0.0071534	0.0063655	0.0100450	0.0113144
43	0.0040729	0.0041205	0.0062736	0.0065597
44	0.0023923	0.0019972	0.0031624	0.0038602
45	0.0011583	0.0011771	0.0014945	0.0024782
46	0.0005624	0.0006386	0.0008100	0.0011383
47	0.0003242	0.0004466	0.0003060	0.0009061
48	0.0001781	0.0001504	0.0002265	0.0002936
49	0.0000960	0.0001485	0.0000381	0.0001422

Appendix D

Baseline Migration Rates (per person per year) by Age, Sex and Race/Ethnicity for 2000-2010 for the State of Texas

Appendix D: Baseline Migration Rates (per person per year) by Age, Sex and Race/Ethnicity for 2000-2010 for the State of Texas

	Anglo		Black		Hispanic		Other	
Age	Male	Female	Male	Female	Male	Female	Male	Female
0	0.0010700	0.0010700	0.0010850	0.0010850	0.0012506	0.0009160	0.0194239	0.0203943
1	0.0015217	0.0014907	0.0016909	0.0019056	0.0012461	0.0009955	0.0210941	0.0200229
2	0.0019733	0.0019115	0.0022967	0.0027261	0.0012417	0.0010749	0.0303331	0.0290748
3	0.0024250	0.0023322	0.0029026	0.0035467	0.0012373	0.0011543	0.0349779	0.0329050
4	0.0028766	0.0027529	0.0050610	0.0058895	0.0011153	0.0013039	0.0495000	0.0485100
5	0.0033283	0.0031736	0.0044325	0.0049917	0.0034221	0.0027366	0.0495000	0.0485100
6	0.0037799	0.0035944	0.0032607	0.0036913	0.0044701	0.0037821	0.0489045	0.0485100
7	0.0042316	0.0040151	0.0032956	0.0031032	0.0055999	0.0054096	0.0447727	0.0466684
8	0.0046832	0.0044358	0.0063370	0.0045661	0.0094463	0.0078439	0.0404706	0.0391402
9	0.0051349	0.0048566	0.0060411	0.0037899	0.0140862	0.0126690	0.0434005	0.0414070
10	0.0055554	0.0052535	0.0286192	0.0258452	0.0268790	0.0226785	0.0349660	0.0392549
11	0.0038848	0.0035759	0.0228442	0.0212634	0.0276752	0.0234350	0.0381773	0.0332049
12	0.0045412	0.0040814	0.0233348	0.0208766	0.0273390	0.0239860	0.0379456	0.0327524
13	0.0037652	0.0036776	0.0229235	0.0205734	0.0265536	0.0230262	0.0370031	0.0353385
14	0.0021371	0.0018457	0.0191543	0.0175220	0.0259395	0.0222053	0.0353153	0.0344627
15	0.0024859	0.0020997	0.0218402	0.0208433	0.0270929	0.0225510	0.0388552	0.0352692
16	0.0022878	0.0019493	0.0210699	0.0177068	0.0290613	0.0216570	0.0433083	0.0389686
17	0.0023448	0.0011724	0.0204695	0.0164599	0.0285888	0.0216001	0.0414770	0.0366887
18	0.0000899	0.0000450	0.0191927	0.0155163	0.0309270	0.0221827	0.0440418	0.0389815
19	0.0000819	0.0000410	0.0144971	0.0152753	0.0296573	0.0213281	0.0457286	0.0411226
20	0.0000754	0.0000377	0.0077118	0.0114897	0.0299502	0.0205290	0.0478612	0.0439840
21	0.0000688	0.0000344	0.0063037	0.0109755	0.0326934	0.0206086	0.0495000	0.0443212
22	0.0000623	0.0000311	0.0040130	0.0076283	0.0342632	0.0206989	0.0495000	0.0473180
23	0.0000558	0.0000279	0.0034713	0.0017356	0.0360608	0.0223696	0.0495000	0.0485100
24	0.0000492	0.0000246	0.0046209	0.0023104	0.0367902	0.0248751	0.0495000	0.0485100
25	0.0015101	0.0007550	0.0046297	0.0023148	0.0358610	0.0248799	0.0495000	0.0485100
26	0.0000434	0.0000217	0.0024119	0.0012059	0.0292879	0.0250093	0.0495000	0.0485100
27	0.0010161	0.0005081	0.0021655	0.0010827	0.0242321	0.0243675	0.0495000	0.0485100
28	0.0014309	0.0007155	0.0022173	0.0011087	0.0210255	0.0246095	0.0495000	0.0485100
29	0.0031979	0.0039683	0.0050829	0.0025414	0.0199879	0.0258554	0.0495000	0.0485100
30	0.0069085	0.0070783	0.0097964	0.0048982	0.0224618	0.0258939	0.0495000	0.0485100

Appendix D, continued

	Anglo		Black		Hispanic		Other	
Age	Male	Female	Male	Female	Male	Female	Male	Female
31	0.0075828	0.0062785	0.0125387	0.0198037	0.0163317	0.0245341	0.0495000	0.0485100
32	0.0087369	0.0082937	0.0144528	0.0237140	0.0175412	0.0270642	0.0495000	0.0485100
33	0.0067066	0.0052044	0.0176733	0.0226146	0.0151022	0.0235400	0.0480333	0.0485100
34	0.0048585	0.0048553	0.0146949	0.0205820	0.0127498	0.0054560	0.0471202	0.0485100
35	0.0048964	0.0049842	0.0155789	0.0201945	0.0132609	0.0224968	0.0447483	0.0485100
36	0.0041118	0.0052934	0.0155451	0.0183717	0.0135819	0.0223180	0.0403455	0.0485100
37	0.0051086	0.0032724	0.0126146	0.0195832	0.0114519	0.0049006	0.0374494	0.0477529
38	0.0042968	0.0038184	0.0145973	0.0170393	0.0129530	0.0207806	0.0342841	0.0442248
39	0.0048383	0.0034517	0.0164460	0.0163952	0.0119532	0.0183470	0.0336064	0.0406311
40	0.0030866	0.0035265	0.0134935	0.0142265	0.0118426	0.0189184	0.0283223	0.0392427
41	0.0044388	0.0037917	0.0151319	0.0135153	0.0118778	0.0171770	0.0301789	0.0356651
42	0.0043438	0.0036500	0.0157047	0.0140513	0.0111156	0.0179877	0.0279787	0.0353480
43	0.0045725	0.0041599	0.0152362	0.0141195	0.0124586	0.0166718	0.0314361	0.0322572
44	0.0033878	0.0026502	0.0139285	0.0141321	0.0105378	0.0146430	0.0243644	0.0286504
45	0.0029339	0.0022833	0.0127598	0.0116735	0.0089514	0.0135648	0.0231037	0.0290636
46	0.0034034	0.0017289	0.0149595	0.0100155	0.0100017	0.0130221	0.0235873	0.0284007
47	0.0028041	0.0020673	0.0111078	0.0108867	0.0094761	0.0139255	0.0257212	0.0299417
48	0.0025064	0.0016775	0.0136662	0.0104159	0.0098089	0.0120497	0.0218532	0.0258323
49	0.0031020	0.0030080	0.0116277	0.0099480	0.0083145	0.0113125	0.0209887	0.0273686
50	0.0021284	0.0021461	0.0118900	0.0089329	0.0078334	0.0107242	0.0197136	0.0222657
51	0.0034645	0.0034644	0.0138474	0.0119426	0.0106368	0.0128126	0.0198171	0.0207440
52	0.0029752	0.0026035	0.0123574	0.0110824	0.0079528	0.0110815	0.0199595	0.0206346
53	0.0034228	0.0029390	0.0104382	0.0127017	0.0096205	0.0115334	0.0193450	0.0225383
54	0.0039263	0.0044784	0.0152251	0.0129832	0.0097541	0.0127968	0.0185192	0.0185802
55	0.0026533	0.0028972	0.0107850	0.0100534	0.0078921	0.0118530	0.0147334	0.0167862
56	0.0043922	0.0041167	0.0119136	0.0117408	0.0093417	0.0114803	0.0167182	0.0182816
57	0.0035663	0.0036274	0.0127532	0.0112758	0.0091213	0.0099533	0.0160869	0.0176058
58	0.0044083	0.0047177	0.0129718	0.0128201	0.0085106	0.0100683	0.0127630	0.0165422
59	0.0038610	0.0041205	0.0122678	0.0115100	0.0076378	0.0094278	0.0123280	0.0153160
60	0.0031571	0.0027159	0.0077806	0.0073759	0.0067049	0.0077536	0.0107559	0.0139468

Appendix D, continued

	Anglo		Black		Hispanic		Other	
Age	Male	Female	Male	Female	Male	Female	Male	Female
61	0.0051003	0.0046146	0.0161307	0.0124620	0.0089358	0.0111803	0.0130837	0.0137489
62	0.0058431	0.0052671	0.0190358	0.0139119	0.0098701	0.0105728	0.0128981	0.0134983
63	0.0040594	0.0041720	0.0141255	0.0126348	0.0096591	0.0107072	0.0135104	0.0156142
64	0.0065801	0.0044936	0.0160049	0.0135493	0.0085677	0.0111018	0.0134677	0.0154046
65	0.0065168	0.0054964	0.0163466	0.0121439	0.0113892	0.0117948	0.0170540	0.0185312
66	0.0056728	0.0056499	0.0178618	0.0147924	0.0109775	0.0111359	0.0111866	0.0180609
67	0.0058252	0.0049079	0.0158633	0.0147488	0.0128745	0.0134822	0.0098423	0.0045626
68	0.0064350	0.0056039	0.0115387	0.0131797	0.0106345	0.0111136	0.0174791	0.0146709
69	0.0068318	0.0053954	0.0131775	0.0137852	0.0119549	0.0114089	0.0139121	0.0171328
70	0.0046030	0.0042453	0.0125032	0.0092501	0.0114494	0.0104261	0.0155344	0.0158609
71	0.0063570	0.0050995	0.0121921	0.0110105	0.0116588	0.0119184	0.0182256	0.0158824
72	0.0046401	0.0044069	0.0073979	0.0095807	0.0106510	0.0111421	0.0157699	0.0128208
73	0.0064277	0.0055939	0.0145470	0.0102380	0.0111721	0.0092344	0.0099376	0.0170632
74	0.0047925	0.0047876	0.0055842	0.0096912	0.0098204	0.0095711	0.0120198	0.0124394
75	0.0016735	0.0025439	0.0034234	0.0041946	0.0051647	0.0060460	0.0031452	0.0014580
76	0.0059058	0.0058835	0.0082832	0.0103637	0.0077550	0.0074828	0.0076724	0.0035567
77	0.0039212	0.0049442	0.0035344	0.0017672	0.0084047	0.0085286	0.0074263	0.0040875
78	0.0046082	0.0048928	0.0106353	0.0090462	0.0088744	0.0074980	0.0063062	0.0093530
79	0.0036718	0.0051627	0.0063539	0.0068676	0.0090042	0.0085663	0.0064801	0.0076559
80	0.0020134	0.0021733	0.0033643	0.0016822	0.0042424	0.0033416	0.0032692	0.0027634
81	0.0035878	0.0064244	0.0060230	0.0063746	0.0059726	0.0045672	-0.0102507	-0.0096438
82	0.0018023	0.0009011	0.0041593	0.0061597	0.0036868	0.0061175	0.0017593	0.0008156
83	0.0023734	0.0040444	0.0108935	0.0097259	0.0079302	0.0069060	0.0129889	0.0114491
84	0.0024444	0.0046858	0.0024887	0.0016160	0.0006137	0.0002626	0.0046043	0.0021344
85	-0.0108621	-0.0088830	-0.0199774	-0.0099887	-0.0152002	-0.0127904	-0.0132412	-0.0162711