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IMPLICATIONS OF A GROWING POPULATION AND CHANGING DEMOGRAPHICS IN NEW MEXICO

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Thank you for inviting me. I am not going to be talking about the implications per say. I would like for you to draw the implications from my presentation. We will start not with numbers. For those of you who are expecting that demographers are wedded to numbers, I will dispel that myth this afternoon. I am going to show you a lot of pictures.

Figure 1 shows the age structure of the population that shows the past, the present, and the future of New Mexico's population. How can demographers show you that in a picture? Through what is called a population pyramid. The population pyramid shows you where this population has been in terms of past fertility, mortality, and migration. The demographers long before I was even born were very clever because they discovered that you could put these bars on their side and create a pyramid. If the fertility is high and there is no migration, this would be a perfect pyramid because attrition is only through mortality. Just to explain what this means, these are the results of fertility five years ago because that says zero to four years. If you compare this bar to the bar on top of it, you see that fertility in New Mexico has been declining. Where there is a bulge or an indentation that you don't expect or is a deviation from a pyramid, in this country there has not been an epidemic to cause such a mortality

pattern, so these are primarily due to migration. This is also due to migration. As you go up the ladder, it shows that the older the population gets, the fewer the number of people.

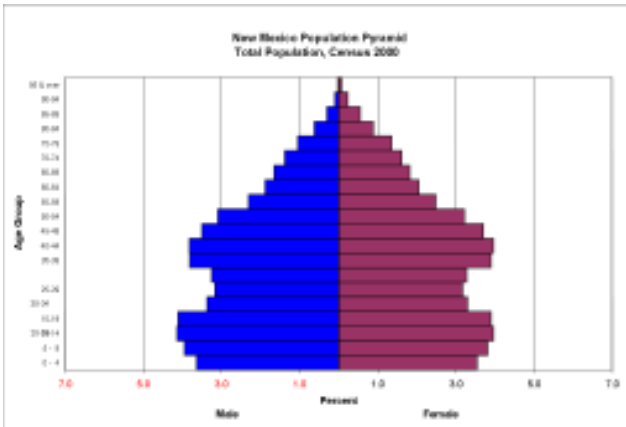

Figure 1. New Mexico Population Pyramid - Total Population

Figure 2 is the Anglo or the White Non-Hispanic pyramid. It is a much older population. Fertility is much lower, and you see this prominent bulge in the middle. Most of you have heard about the baby boom generation; most of this bulge is accounted for by the baby boom generation. There is an expression among demographers: the baby boom generation is like the pig in the snake. Wherever they are, the bulge is there. This is most pronounced among the Anglo population. Figure 3 shows the Hispanic or Latino of any race. Fertility is high among Hispanics or Latinos. Some evidence of migration is also noted in the Hispanic population pyramid. It seems like no one is exempt from the baby boom except for people from Asia like me. Filipinos have a boom all the time, so you have a perfect pyramid.

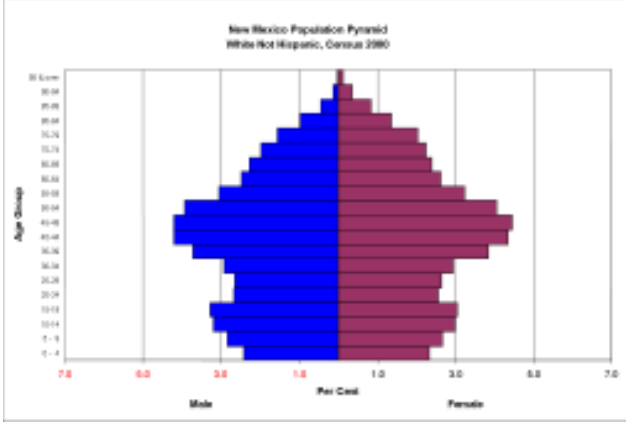

Figure 2. New Mexico Population Pyramid - White Non-Hispanic

Figure 3. New Mexico Population Pyramid - Hispanic or Latino

Figure 4 is the Native American population. You can see that even among Native Americans fertility is already declining. The Native American population pyramid reflects a long history of high fertility, but even among Native Americans, out migration is evident among the population in the labor force age groups. Notice the indentation in these age groups.

With the exception of Chinese and Japanese, Asians are recent arrivals to New Mexico (Figure 5). These are migrants. The Asian population pyramid points to the predominance of females. Among Native Hawaiians and Other Pacific Islanders (Figure 6), there is an overrepresentation of the population in the labor force ages, which is shown by the protrusion at the midsection of the population pyramid. This shows that most Hawaiians and Pacific Islanders migrated to New Mexico for employment, mostly in the military.

Figure 4. New Mexico Population Pyramid - Native American Population

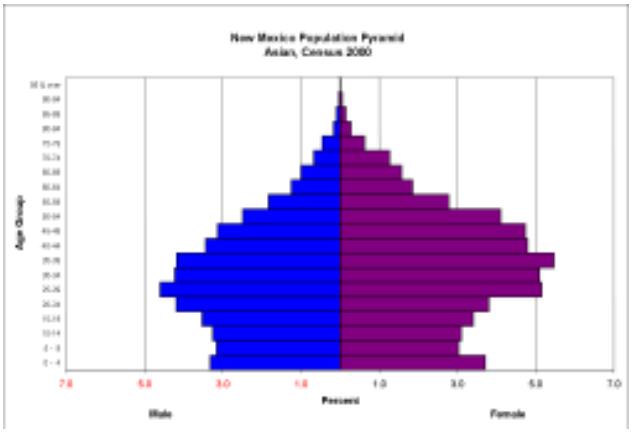

Figure 5. New Mexico Population Pyramid - Asian

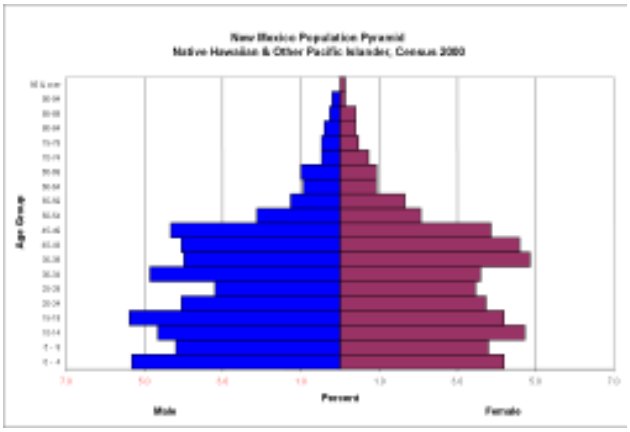

Figure 6. New Mexico Population Pyramid - Native Hawaiian and Other Pacific Islander

Generally when people respond "Some Other Race" or do not indicate a race in the Census form, the Census will classify them as White Non-Hispanic (Figure 7). In the upcoming Census 2010, if you do not yourself specify your race but instead check the box "Other," the Census will do a "hot code" and will designate a race and or ethnicity based on your neighbors' characteristics. My thinking is it is better to self identify than be identified based on some statistical model by the Census. In the past, about 97% of those who identified themselves as "Some Other Race" were reclassified as White Hispanic.

The population pyramid of "Two or More Races" shows that this is a very young population (Figure 8). The bottom of the pyramid is broad and as the bars progress to the older ages, they gradually decline, and past the middle age groups, they quickly taper off. The broad base shows the dominance of children among those who identified with more than one race indicating the increase in interracial couplings in New Mexico. The Census 2000 was the very first time that "check as many as apply" was an option in the race question.

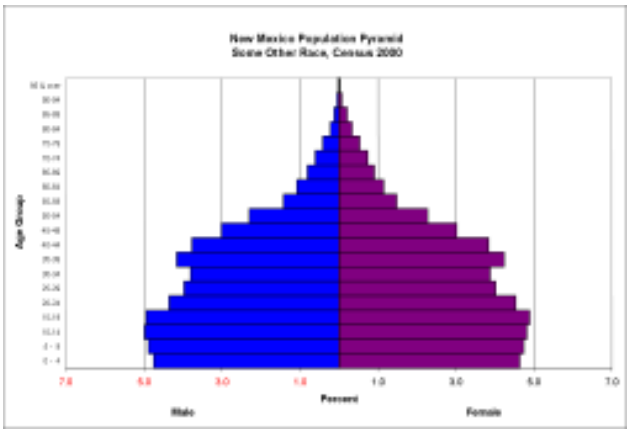

Figure 7. New Mexico Population Pyramid - Some Other Race

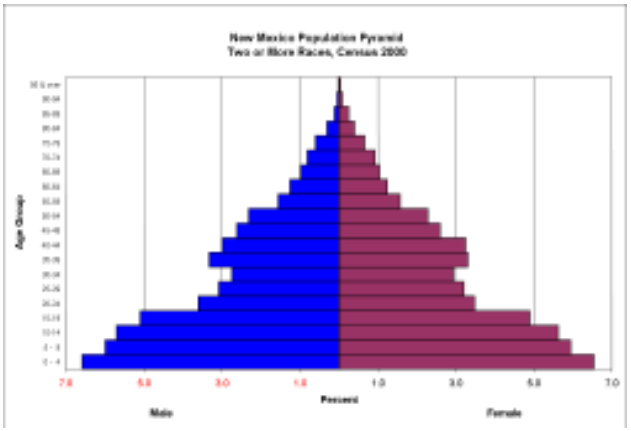

Figure 8. New Mexico Population Pyramid - Two or More Races

Minorities have a higher dependency ratio (Figure 9). Demographers define dependency ratio as the number of people who are dependent on the working age group, which is 18 to 64. This is a theoretical concept that serves as a rough measure of economic dependency. It does not reflect the actual employment situation in a given population. A "true dependency ratio" can be calculated by adjusting both numerator and denominator for the actual number of people not working; that is, the not working people will be added to the numerator and taken away from the denominator. In times of high unemployment, this dependency ratio will be higher than the "theoretical dependency ratio" measure as mentioned earlier. Nevertheless, dependency ratio is a good quick measure of the population's economic burden. Minorities have a higher young dependency ratio because their population below 18 years old is large. This is particularly true among the population group that was of "Two or More Races." Among Anglos or White Not Hispanic or Latino, the

young dependency ratio is considerably lower. The population pyramid of the "Two or More Races" shows a young dependency ratio of about 80 to 90 per 100 whereas that of the Anglos shows 30 per 100. Clearly these two population groups have different requirements for social services.

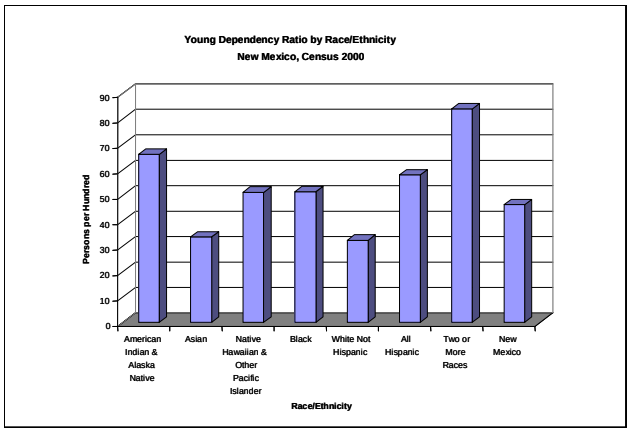

Figure 9. New Mexico Young Dependency Ratio by Race/Ethnicity (100 Anglos between the ages of 18 to 64 years support 30 people below age 18 years)

Since I knew that this presentation would be to members of water assemblies throughout the state, I wanted to know if there was a difference in water consumption between a young and an old population. I posed this question to my staff who have children. Their unanimous response was, "Of course. If you have babies and a teenager, water consumption goes up. As you get older, water consumption levels off." I don't know. I'm looking at the audience, and I see grey hairs like mine. You can tell me the older we get the less water we use.

New Mexico is aging. We are aging very fast because of the baby boom generation. Figure 10 shows projection pyramids. We start with 2010. If you recall, the 2000 population pyramid is slightly broader here. Here we have 2000, 2010, 2020, and 2030. The older the population gets, the more barrel-shaped it looks. Even among actual people we see a thickening of our middle, by the time you get to middle age, your body starts to look like a barrel. Thus, anytime you see a barrel-shaped population pyramid, think aging population.

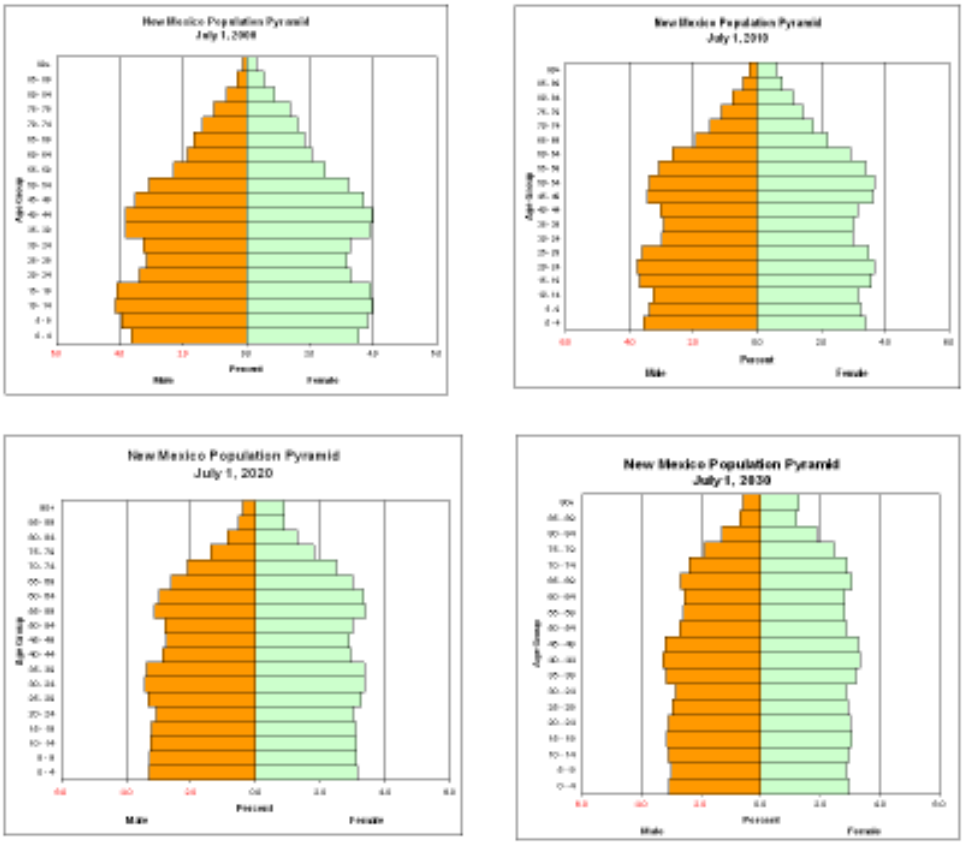

Figure 10. Population Pyramids 2000, 2010, 2020, and 2030

The population of New Mexico is growing, but growth is uneven. Figure 11 has a trend line that shows population growth in New Mexico. The pink line is metropolitan areas and the yellow is non-metropolitan areas. The future New Mexico population is more metropolitan than rural. Employment and educational opportunities are located in cities and urban areas. Unless there is a reversal of current economic growth patterns, the rural areas in New Mexico will continue to lose population as their labor force migrates to urban and metropolitan areas for employment and education. In some cases, migration is motivated by proximity to a health care facility, a hospital, or a health clinic. Figures 12 and 13 reiterate the urbanization of New Mexico. The metropolitan population overtook the rural population in the 1960s such that by 1970, the majority of New Mexicans reported that their place of residence is a metropolitan or urban area. The point of no return is gone. This is just to show you in maps (Figures 14-16), and if you watched the star shapes here, you will see that they start growing but they concentrate those large counties. The last figure is 2020. You can see the growth around those metropolitan areas.

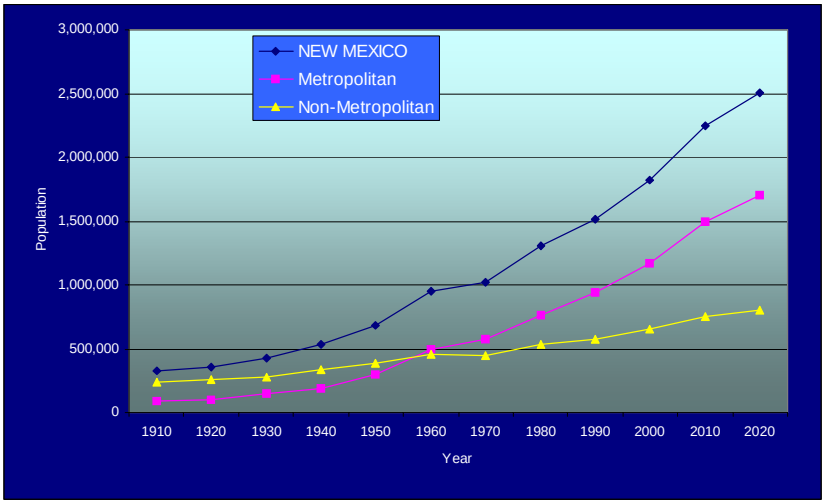

Figure 11. Population Size of New Mexico's Population by Metropolitan and Non-Metropolitan Areas: 1910 to 2020 (2010 and 2020 are projected numbers)

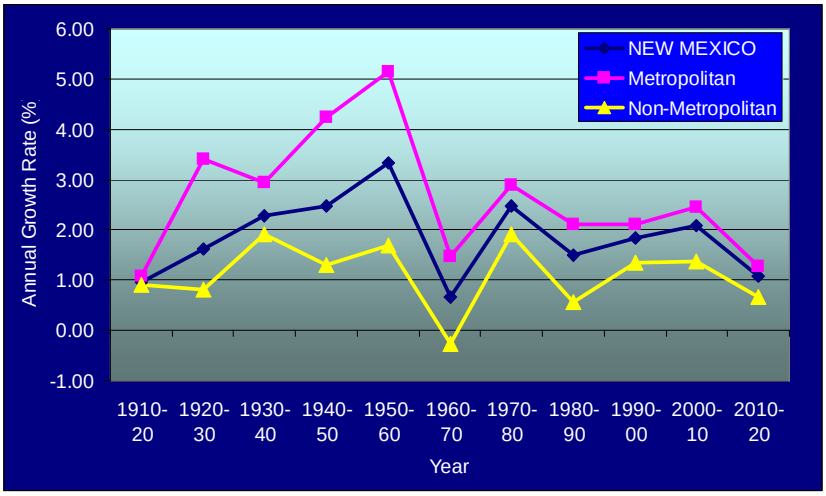

Figure 12. Annual Population Growth Rate (%) in New Mexico, by Metropolitan and Non-Metropolitan Counties: 1910 to 2020

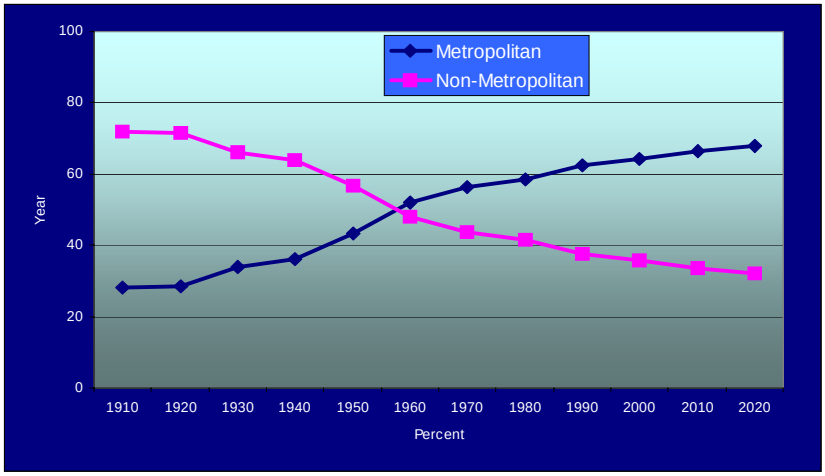

Figure 13. NM Population Distribution by Metropolitan and Non-Metropolitan Areas: 1910 to 2020

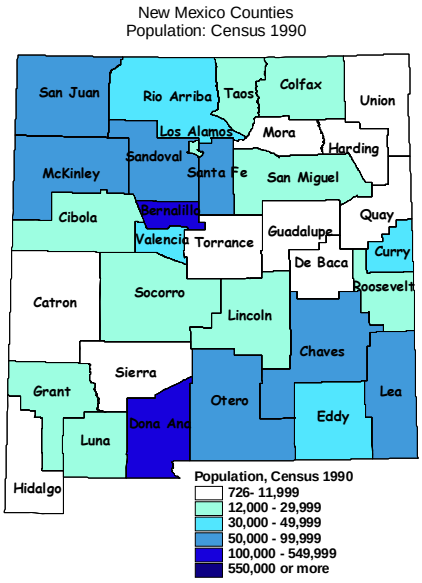

Figure 14. NM Counties Population Census 1990

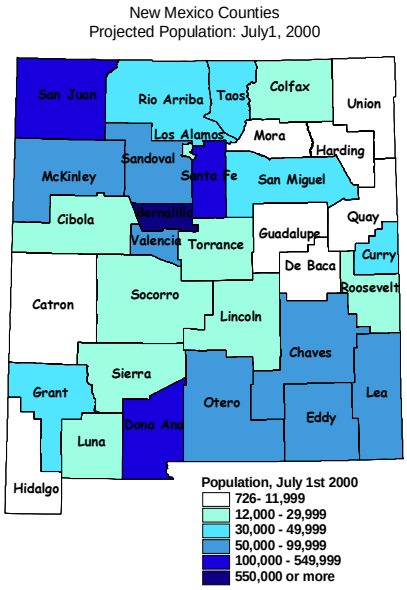

Figure 15. NM Counties Population Census 2000

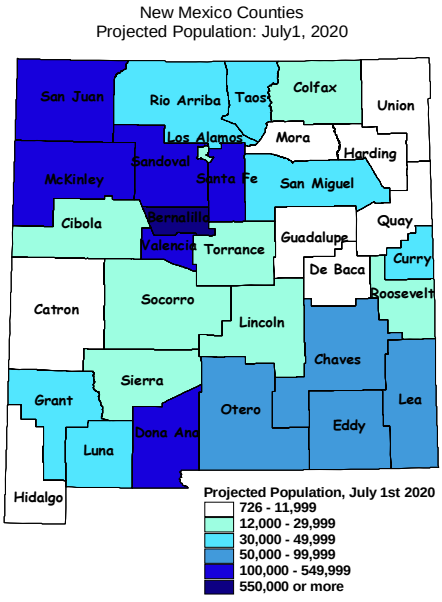

Figure 16. NM Counties Population Census 2010

Figure 20 a, b, and c depicts annual population growth rate trendlines. You can see that they all go up and down. They follow the same sawtooth pattern. Those of you who have lived here all your life or most of your life at least know that population growth in most of New Mexico counties follows the boom and bust of the economy. If the economy improves, you retain your people or you attract people. Even if you don't have any in-migration, if you retain your population, you will still continue to grow. I would like to dispel the myth that only migration accounts for population growth. Growth also occurs because of what is called natural increase or the difference between births and deaths. Even in the absence of migration, if the population is young, fertility will outnumber deaths. However, as the population becomes more barrel-shaped, deaths will outnumber births. In this case, migration becomes the engine of population growth. A good example is Sierra County. Sierra County grows primarily by migration, and it is retirement migration. Natural increase in Sierra County is negative, which means that deaths are more than births. Yet, Sierra County has been growing at a fairly decent rate of about 2% every year. Growth patterns among age groups are extremely variable. These are growth rates in percent. You can see the different age groups here. You can see that their growths are very different from the older age groups. Whether you are in a metropolitan county in New Mexico or a non-metropolitan county, these baby boomers are going to dominate population growth, until they die out. The middle aged and the elderly will continue their dominance as the children of the baby boomers come of age. Demographers are always looking for labels. After the baby boom are the baby boomlets. Starting in the year 2030, these boomlets will reach retirement age (65 years old). Between the boomers and the boomlets, New Mexico's population pyramid will become more barrel-shaped and will retain this shape for a very long time.

Table 1 shows projection numbers that were done in 2004; they will be revised soon, especially in light of a faster than anticipated growth mid-decade. Regardless, BBER projects that by 2020 New Mexico will have a population of about 2.5 million. This will be somewhat higher in the revised projections that will be produce sometime in 2008. In 2006, we estimated that New Mexico has reached the 2 million mark.

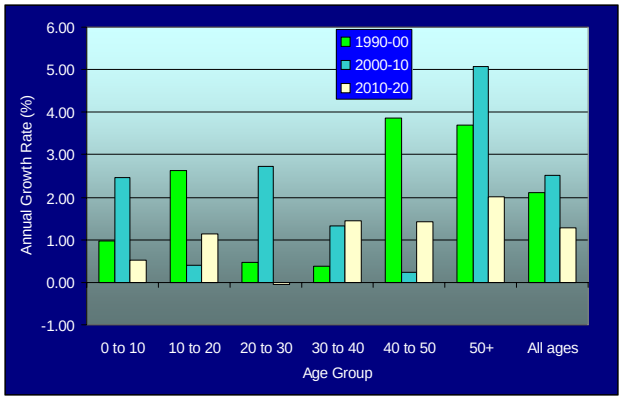

Figure 20a. Annual Population Growth Rate (%) in New Mexico, by Place of Residence Age Group: 1990-2020; Metropolitan Counties

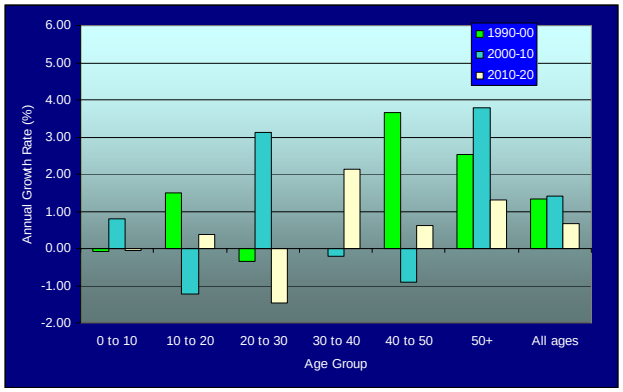

Figure 20b. Annual Population Growth Rate (%) in New Mexico, by Place of Residence Age Group: 1990-2020; Non-Metropolitan Counties

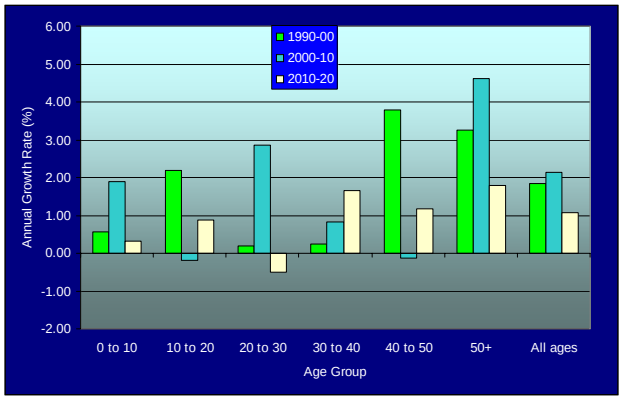

Figure 20c. Annual Population Growth Rate (%) in New Mexico, by Place of Residence Age Group: 1990-2020; New Mexico

Table 1. Projected New Mexico Population by Place of Residence July 1, 2010, 2020

Age Group	Metropolitan		Non Metropolitan		New Mexico	
	2010	2020	2010	2020	2010	2020
0 - 10	219,595	231,233	108,722	108,164	328,317	339,397
11 - 20	189,700	212,750	98,231	101,972	287,931	314,722
21 - 30	208,350	207,076	106,799	92,305	315,149	299,381
31 - 40	196,861	227,389	84,630	104,758	281,491	332,147
41 - 50	184,187	212,505	84,640	89,987	268,827	302,492
Over 50	500,118	612,077	269,486	307,332	769,604	919,409
All Ages	1,498,811	1,703,030	752,508	804,518	2,251,319	2,507,548
Percentage Distribution						
Age Group	Metropolitan		Non Metropolitan		New Mexico	
	2010	2020	2010	2020	2010	2020
0 - 10	14.7	13.6	14.4	13.4	14.6	13.5
11 - 20	12.7	12.5	13.1	12.7	12.8	12.6
21 - 30	13.9	12.2	14.2	11.5	14.0	11.9
31 - 40	13.1	13.4	11.2	13.0	12.5	13.2
41 - 50	12.3	12.5	11.2	11.2	11.9	12.1
Over 50	33.4	35.9	35.8	38.2	34.2	36.7
All Ages	100.0	100.0	100.0	100.0	100.0	100.0

New Mexico's population is increasingly becoming more diverse (Figure 21). Each race is represented by these different colors. Hispanic is not a race, according to the Census and the Office of Management and Budget, even if most Hispanics consider it a race. For purposes of presenting the minority population, Hispanics have to be taken out of the "White Race." Minorities include White Hispanics, Blacks, American Indians, Asians, and Native Hawaiians/Pacific Islanders. These "Two or More Races" are debatable whether they are going to be considered as minority or White. But for this presentation, I have included them in the Minority category. There is a debate among demographers and statisticians as to how to handle "Two or More Races."

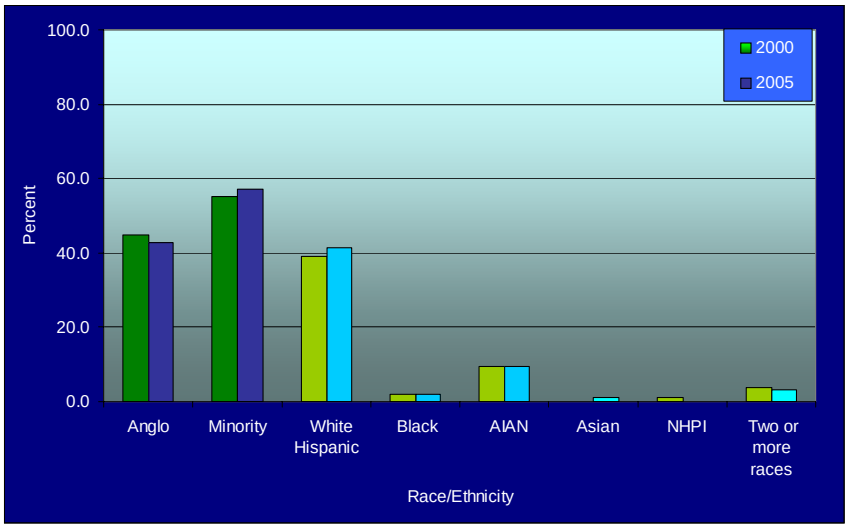

Figure 21. Race Ethnic Distribution of New Mexico Population: Census 2000, American Community Survey, 2005

Demographers—being demographers—want consistency across time, especially as we calculate fertility, mortality, and migration rates. Thus, the introduction of this "Two or More Races" category poses a major consistency problem. We don't have numerators to the denominators that have these two or more races. Births are reported as single race; deaths are the same way; school enrollment data, hospital discharge, and all of those are in single race categories. To be able to have consistency in measuring these events, I end up redistributing the "Two or More Races" population to single race categories.

Figure 22 is the race ethnic distribution of births. You notice that minority births have predominated since 1990. This dominance of minorities in the births data might have been true even prior to 1990 but we did not have race breakdowns in earlier data. Anglo births are declining. Hispanic births are increasing. American Indian, Black, and Asian births are steady. They are not declining or increasing, just holding their ground. These red bars represent Anglo deaths. The bars in Figure 23 show that Anglos are the most numerous in the number of dead people. The pink ones are Native Americans. The green represent Blacks or African Americans. Hispanic deaths appear to be increasing but only slightly. When you look at this figure and the previous figure on births, you can see that the state is going to be increasingly more Hispanic and minority and will be doing so at a rapid rate.

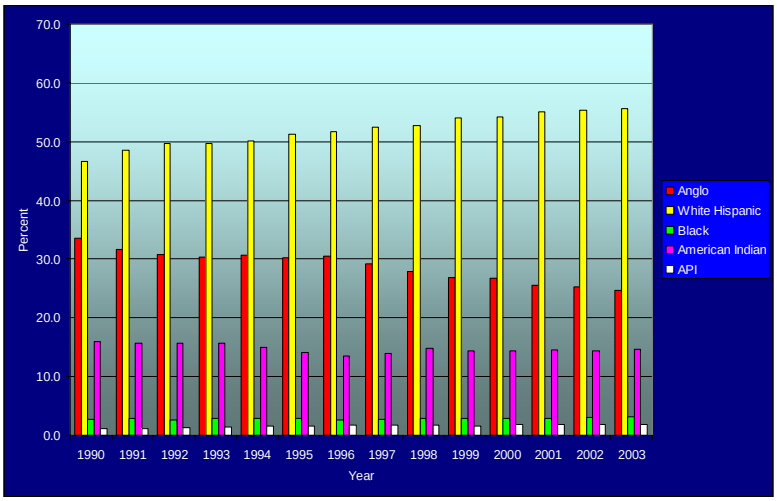

Figure 22. Race/Ethnic Distribution of Births in New Mexico 1990-2003

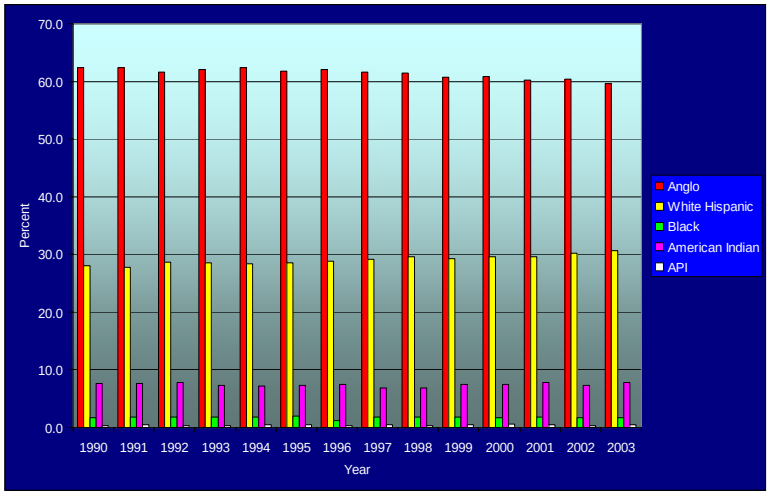

Figure 23. Race/Ethnic Distribution of Deaths in New Mexico 1990-2003

Growth will be in and around areas where there is employment and housing, where educational institutions are located, where retirement infrastructure is available, where there are amenities to attract upwardly mobile adults and affluent retirees, and where water is available to sustain population and economic growth. I put question marks around the last one, because if we live in Nevada or Los Angeles, or anywhere in California, they do not really have a lot of water, but they are growing very fast. People tell me, "Dely, when you do your projection can you put in water as a constraint to growth?" I have yet to find a model where I could incorporate water as a variable for the projection that I do. However, I am not opposed and I am very interested in looking at a simulation or developing scenarios of what if the consumption goes down or up, what if? That would be exciting to me, but I do not know how to do it with the demographic model that I am using currently. I am willing to go there. In fact, I just had two very bright young men, one just finished his Ph.D. and one is finishing his Ph.D., show me all of these models. But how do we model water here? I'm looking at Lee Brown, and maybe he can show me. He's an economist. Maybe the economists can show me how we can model the water component in the population projection equations. I know that water is a constraint to growth, and some towns in the past have become ghost towns because of lack of water. Given improvements in technology, I do not know whether or not water is a limit to population growth. I am thinking of Las Vegas and California. They seem to keep growing at a very rapid rate. I'm not an advocate of rapid population growth. I am just asking the question "Is water a limit to population growth?"

Question: How do you determine in years like this one, 2007, what the population is? How do you update your population in a noncensus year?

Alcántara: We call them intercensal estimates. The Census Bureau does its own. We do our own. We disagree with the Census Bureau. We find their numbers to be much lower than what we expect. How do we do it? We collect a lot of indicators. We collect building permits, births, deaths, IRS returns that the Census provides us, motor vehicle driver's licenses to look at migration, and school enrollment in some cases—not in every case. We look at those and see how the population is growing given these different indicators. Our major methodology is the housing unit method. We start with the housing that is collected by the Census and then add to it the new building permits that we get from the Construction Industries Division, from special permitting places. There are 22 special permitting places. They are cities and some counties that give permits. We use those. We start with what is called the persons per household or average household size from the last census and the vacancy rates also from the last census. These items are our starting points. We start looking at what school enrollment is, whether it is growing or declining. In cases where we know that the population is not growing very fast because the building permits, births, and deaths are not really changing that much, then we use the last census persons per household and vacancy rates. However, for places that we know are growing very fast, like Rio Rancho, we adjust these statistics based on the rate of change between, say, 1990 and 2000 in the persons per household. The vacancy rate is very tricky. When available, we use data from the apartment association to calibrate the vacancy rates, but that is only available for metropolitan Albuquerque and Santa Fe. Starting in 1999, the American Community Survey has been collecting data on a monthly basis, but the data are only available for seven counties. We use the vacancy rates from the ACS when appropriate. We do some measurements in terms of the vacancy rates vis-a-vis the relationship of the state vacancy rates and the county vacancy rates. We use that as a guide to calibrate the local area vacancy rate. The Census is our main source of information for housing statistics. There is a clamoring for sub-county population estimates. The challenge to produce populations at the sub-county level is great. Currently, we are geocoding or address matching our births, deaths, building permits, and driver's licenses that we have up to 2004. We are still trying to get permission to use data from 2005 to 2006 from the MVD. The match rates are really poor in a lot of cases. There is a lot of imputation and a lot of judgment. However, if I am not comfortable with the numbers generated from all these indicators, I will make a field visit. I will go and talk to the local people. For example, when I had a project for Lea County, I went to Lea County and interviewed hotel, RV operators, college administrators, employers, and construction workers. I wanted to get a sense of the current population situation in the county. I wanted to know not only numbers of people moving into Lea County but also their characteristics—that is, age and gender and if they have children, how old their children are. I was told that Lea County is busting at

the seams. I said, “Ok. I haven’t been there in a long time.” I went to Lea County and it is true. They do not have enough housing, so people are in hotels and RV parks. The Louisiana Energy Services (LES) who will operate the uranium enrichment plant near Eunice allows for hotel stays. LES claims that when the plant is fully operational, it will employ a maximum of 1,800 people. That is the long answer to your question.