

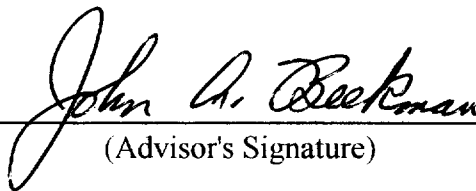
Population Projection for the Indianapolis Standard Metropolitan Statistical Area

An Honors Thesis By

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Purpose of Thesis

This thesis was completed to give me a better understanding of how demography is used in society. It was also done to project the future population of Indianapolis and to see how the city will grow and how its characteristics will change over time. The process of completing the projection involves learning not only how to use the mathematical formulas but where to find the necessary data to be used in the projection. Another benefit from the thesis came in the form of making decisions as to opinions on which data is the "correct" data. There are also decisions to be made as to what should be expected from a population. This gives a new perspective on the actuarial profession where the classes all seem to give the impression that there is always a right answer.

Acknowledgements

I would like to thank many people for the help in the completion of this thesis. First, I would like to thank my parents who have been with me through all of the good times and supporting me in those times that were not so good. I would especially like to thank my father who incidentally steered me into Actuarial Science by an offhand comment at dinner one evening.

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1. Introduction

Almost everyone is familiar with commercials in one way or another. They are prevalent in television everyday and take up a sizeable chunk of the viewing time of any television show. Approximately one fourth of every hour of television is devoted specifically to commercials of some form. What many people do not realize is that each of these commercials are carefully aimed at a special viewing group also known as a demographic region. Each region is defined by numerous characteristics such as age, sex, education, and employment status. Advertising is not the only area that uses demographics to aid in their goals, but is one of the numerous businesses and ventures that either directly or indirectly take advantage of the data available to them.

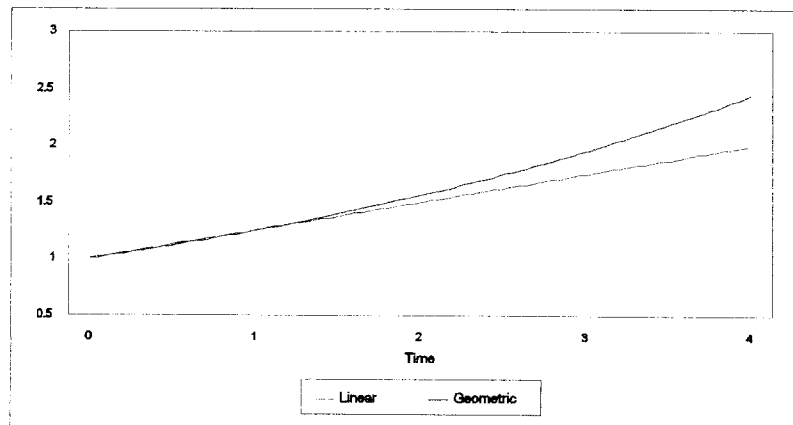
The Social Security system makes use of the demographics by using the proportion of the retired population to the working population. The working age population provides for the benefits of the retired portion of the population. The insurance industry also makes use of the demographics. The actuary finds the information vital to calculations of premiums for insurance products and the reserves created for each of these products. Whether it be mortality rates for a female smoker or the expected lifetime of a male age 56, an actuary uses a good deal of the information collected by the U. S. Census Bureau.

There is much information that can be gathered from the census reports put out by the United States government. By using a number of such reports, one can

project the population of a particular area into the future a number of years. Why would one want to project the future population of an area? One reason might be that as the population of an area increases the current utilities will not be able to compensate for the increase in the number of users. Should the growth rate change there could possibly be brown outs or a lack of water pressure to certain neighborhoods. As a result of similar possibilities, businesses and local governments use the population projections to determine which areas will be in need of improvements or be open to investment in the future.

2. Models

There are several ways to project the population of an area into the future. The first method is a linear interpolation. The basis of this model is that the population of a statistical area increases by an equal amount every year. While this may be appropriate to model the population between years, it is not a valid assumption when projecting multiple years into the future. Another method is the



geometric model. This model does not assume an equal increase every year. What the geometric model assumes is that as the population grows, it will begin to grow at an accelerated rate. As is obvious from the previous graph, the two methods give you approximately equal results in the first year but then begin to diverge after that point. One failure with these two methods of projecting populations is that neither set an upper limit on the population (Brown 163). There are certain limits such as geographical area and raw materials that place upper limits on the population. A city cannot continue to grow unchecked or it will run into overcrowding and shortage problems.

One method of projecting the population that does take into account upper limits is the logistic curve method. This method has the population start out growing slowly but quickly speeds up and then towards the upper limit it slows down again. When the population is plotted in the form of a graph, the plot resembles the shape of a "s" with the two terminal points stretched out. The population is calculated using the following formula:

$$P(t) = \frac{1}{A + Be^{-kt}}$$

The A is the inverse of the upper limit of the population. B and k are both parameters solved for after A has been determined. There are several options for choosing A. One method is to "guess and check" but that is neither practical nor efficient. The second method is to take the population numbers from three censuses

that are equidistant from one another so that $(t_3 - t_2) = (t_2 - t_1)$ is a true statement where t is the year of the census. If this is found to be true then the following formula can be used to find the reciprocal of A .

$$\frac{1}{A} = \frac{\frac{1}{C_1} + \frac{1}{C_3} - \frac{2}{C_2}}{\frac{1}{C_1 C_3} - \frac{1}{C_2^2}} \quad (\text{Keyfitz-Beekman, 98})$$

The final method is by iteration using some computer program or an algorithm from numerical analysis. The values C_1 , C_2 , and C_3 are the census totals of those particular census years chosen such that the years are equidistant from one another. The next problem to overcome is choosing which three census to use in calculating A . Should one use the most recent three censuses to calculate A or should there be more than ten years between censuses? This turns out to be a choice to be made partially depending on the data available and prior opinion.

There are several advantages and disadvantages to using the logistic curve to project the population. It is advantageous to use the logistic curve because one does not have to take into account possible changes in fertility or mortality. It is inherent in the model that they will both change but it is unnecessary to know which or how much is changing. The disadvantage of this model is that it does not take into account the possibility of migration. One must also choose which set of censuses to use when calculating the upper population limit. This action takes into account the

prior opinion of the forecaster. Each set of census data will not necessarily give the same result and therefore one set must be chosen as the "correct" data points.

Another popular method of projecting a population is through the component method. This method takes into account both fertility and mortality as well as migration when it forecasts the population into the future. The model is as follows: $P(t) = P(0) + B - D + I - E$. $P(0)$ is the original population at time zero. B and D are related in the B is the number of births and D is the number of deaths. I and E are similarly related. The number of people who immigrate into an area is I and those that emigrate from the area are denoted by E . One of the major benefits of using the component method is that it takes into account changes in mortality, immigration, and fertility of the general population. Minor changes in any of these three statistics can have enormous impact on the future population numbers. Should fertility increase, a decrease in the mortality may cause the population to be stable, decrease, or increase depending on how minute the changes are.

There is one major disadvantage of this method. It is very number intensive. Fertility number, mortality numbers, and immigration statistics must all be found in some source. Census data is one of the prime sources of all of this data but it is still not an easy process to find all of this data. This process of projecting the population into the future is not difficult once all of the numbers have been found and put into the proper form. The numbers are used in a Leslie Matrix in the following form:

MK. **K** is a vector of the stable population. **M** is a matrix of a description of the population capable of giving birth and a description of the population that is both entering and leaving the area of study.

3. Projections Using the Logistic Curve

When setting about to project the population of Indianapolis, it is important to find the population numbers of the past several years of the census data. For this projection I have located the census data for the years 1930 through 1990. The numbers used came from either Characteristics of the Population: Indiana or General Population Characteristics: Metropolitan Areas. Each year is split both by gender and age group. A table of each census data can be found attached at the end of this paper.

One of the first decisions to be made concerning this projection is whether to use the individual age/gender groups and project the population for each group or to project just off of the population totals. Completing the projection using the first method allows growth or decreases in the individual groups which does not necessarily match with any other group. The disadvantage with projecting the population this way is that is very difficult to find a group of three years that does not have an anomalous a or k for the projection. The other method makes it less difficult to find the data to complete the project but it does not allow for individual

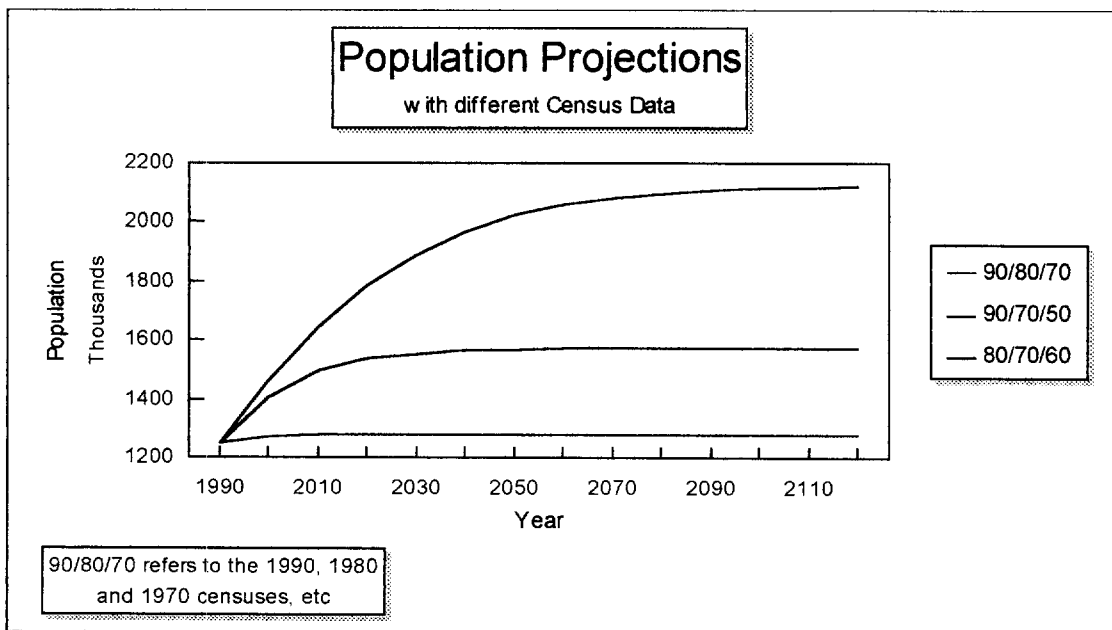
projections of each age/gender group. Without the individual groups the only assumption that can be made about dependency rates is that they are identical to current rates. This is not a valid assumption and thus not an appropriate method to project the dependency rates. This author decided to use the first method and to compare the totals with the second method. One can use different combinations of census data to get different projections for total projections. These different projections may vary greatly depending on how much the area grows in any one year. Anomalous years of growth may cause population projections that does not accurately represent the growth of the area.

Using the census data from the 1930 census data through the 1990 census data, the projections for several different combinations of census data should be performed so that one can make an assumption as to which ultimate population is the one to be assumed as the correct value of a . It is best if these different projections are graphed over time to get a feel for how the populations grow. After this is accomplished, a projection should be made for each of the individual age and gender groups. Should there prove to be no groups of census data that have a complete set of age and gender groups that are feasible then one will have to employ numerical methods to interpolate between the lowest census year's data and the data of the most recent. The data will probably have to have a correcting factor used to make the 1990 population numbers match those of the census data. This projection

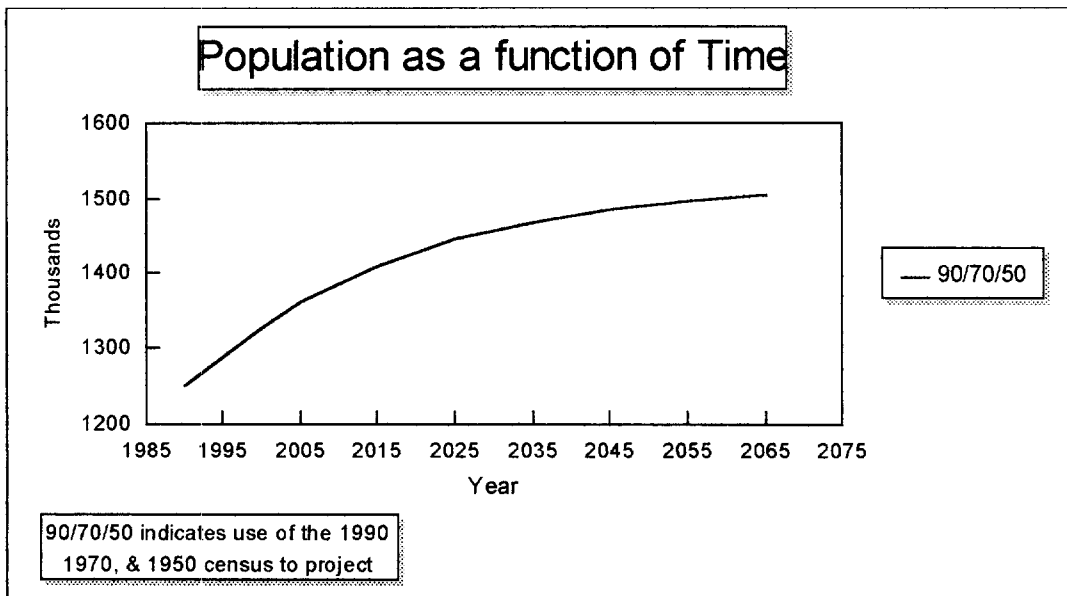
was lucky in that there was a set of census data that had no anomalous readings.

4. The Projection

For this projection, the census data from the 1950, 1970, and 1990 reports were used. This data was used for both a total projection and a projection for each of the individual demographic groups. Projections of the total population ranged with an ultimate population of anywhere between 1,250,000 and 2,100,000 people both of which seem extreme for Indianapolis. Considering the current population according to the census data from 1990 of 1,249,822, the first projection seems remarkably unrealistic. The second number seems to be more reasonable but still overly optimistic. Thus it has been assumed that a number approximately between these two may be more appropriate.



One can see from the previous graph that a projection that falls between the two extremes is probably more appropriate than those that either over project or under project. When the projection for the individual demographic groups was completed the resulting projection fit between the two extremes without being in one extreme or the other.



One thing to notice with these two different graphs is that a different ultimate population has been found from the same census data using the demographic groups to project instead of the total population. The actual values can be found in the appendix following this paper.

Some of the more important numbers to consider with a projection are the dependency ratios. These ratios determine what amount is spent on the elderly and the youth by government programs such as Social Security and others which are paid

for by the working age population. It is necessary to make the assumption as to what the working age population will entail. For this population, it has been assumed that the youth dependents are between the ages of 0 and 19. The working age population is assumed to be from 20 through 65. Everyone above these ages are considered to be the elderly dependents. Whether these are valid assumptions will be discussed in the next section. The dependency ratios are relatively easy to calculate once the projection has been completed. They are merely the population of the particular dependents divided by the total working population. The expenditure for each year is three times the elderly dependents plus the youth dependents divided by the total working population.

Population Numbers

Year	Ages			Dependency Ratios			Expenditure
	0..19	20..64	65+	Youth	Aged	Total	
1980	381,496	658,182	105,653	57.96%	16.05%	74.01%	1.06119
1990	364,007	746,947	138,868	48.73%	18.59%	67.32%	1.04507
2005	368,172	840,845	151,117	43.79%	17.97%	61.76%	0.97702
2025	368,947	919,736	155,877	40.11%	16.95%	57.06%	0.90659
2045	369,021	959,191	156,892	38.47%	16.36%	54.83%	0.87542
2065	369,028	969,860	157,104	38.05%	16.20%	54.25%	0.86646

One can see that according to the data above that there will be a falling demand for the working population to pay for the dependents due to the working class

population growing at a faster rate than that of both the aged and the youth of the population.

5. Analysis

The graphs are pretty and the tables are filled with numbers but what does all of that mean? One should look at the trends for each of the major areas of interest. First, the actual projection of the population will be examined followed by an examination of the dependency rates. The last item that will be looked at is the different age and gender groups to see how they have changed.

The projection should be looked at in total to determine if there is some portion of the projection that does not lie in the expected range of population. As mentioned earlier, it was projected earlier using just the totals to find a total population projection. These projections had ultimate populations of between 1.2 million and 2.12 million. There are also numerous projections that lie between these two projections. With the projection that utilized the different age and gender groups, the projection ended up with an ultimate population of 1.5 million. This projection lies in between the two extreme projections.

This data is not without flaw. There are several items about this projection that need to be corrected in future projections. The first area for correction comes in the area of the initial data. When looking at the data found in the appendix, one

should notice that there is always a couple of sections that are always a little higher than the previous years. These fluctuations are due to the baby boom that caused a sudden increase in the population that is moving through the age groups. As a result of these fluctuations, there are certain portions of the population that when projected grow faster and have higher ultimate populations. The United Nations has developed a method of dampening this uncharacteristic growth of the individual group.(Rogers 23) With these dampening formulas, a projection can be made much more accurately.

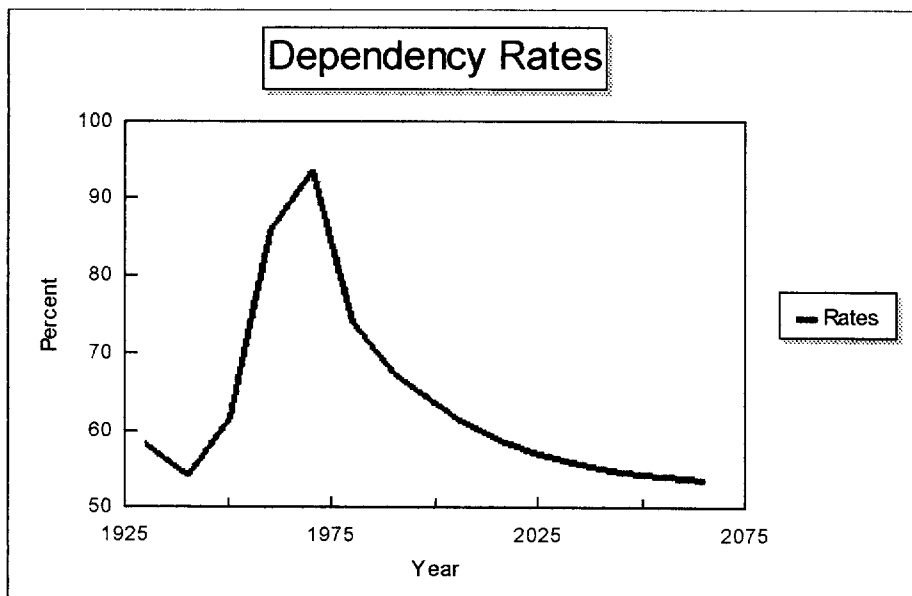
The other problem with the data is that there is a distinct jump in the numbers that cannot be attributed to anything but annexation of land for the city.

Year	Population
1930	364,161
1940	381,077
1950	427,153
1960	476,258
1970	1,111,261
1980	1,145,331
1990	1,249,822

As is obvious, between the census in 1960 and 1970, there is a dramatic jump in the population. This cannot be attributed to an increase in either the birth rate or immigration. The increase is due to annexation of land for the city of Indianapolis.

The best way to counteract this change is to do another projection after the census has been released for the year 2000. At this time, another projection can be completed using the census data from the 1980, 1990, and 2000 censuses.

The next area of concern is the dependency rates. These rates are used to determine how much a community must pay to agencies such as social security. When looking at the dependency rates, one would expect that the number of the aged would increase with the baby boom growing up and moving into retirement. In direct contrast the projection that was completed has dependency rates that are declining over time.

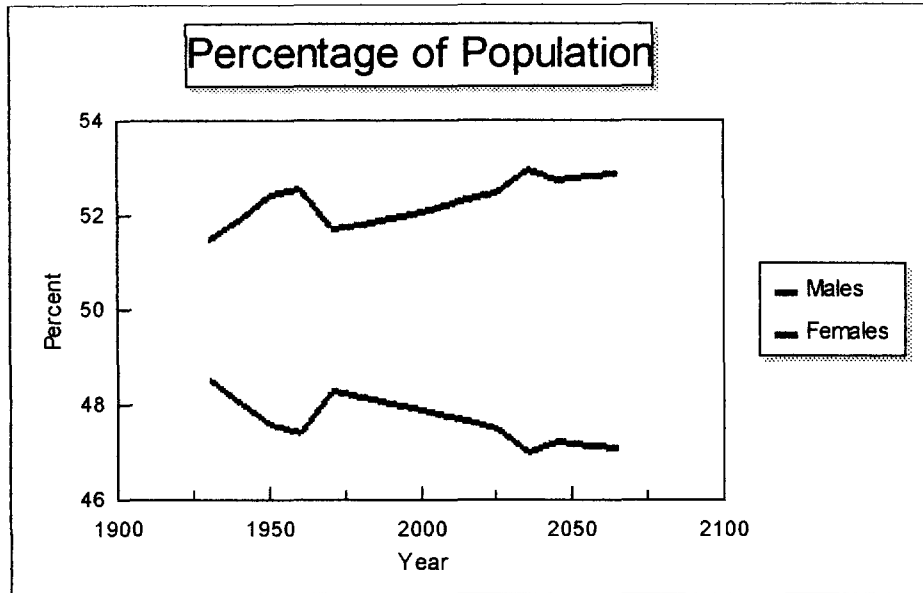


The dependency rates are not drastically falling over the time period. The fact remains that the projection is not following the expected outcome. One thing that is

not taken into account is that the retirement age will be moved from 65 as it currently is to 67 after the year 2027. With this change, we would expect the dependency rates to fall even further. The working population will be increasing and the number of the aged dependents would decrease. This decrease would cause the already lower dependency numbers to fall even more from the date of the change. Depending on how big this change is in the dependency rate, it may not make much difference but it could have a major impact. If the dependency rate falls to a level that is uncharacteristic of these rates, the projection will need to be scrutinized and possibly redone.

Another point that may be examined is the characteristics of the population in general. It is expected that there will always be an approximately equal division of the male and female population. There should not be any significant divergence from this equilibrium unless there is something out of the ordinary that happens to the population. One example of an outside force that would change the population characteristics would be a war that involved the draft being used to fill the army ranks. Several of these occurred between census years but there seems to be no impact on the population splits for Indianapolis. The projection on the other hand seems to point to a growing division between the two sexes. It appears on the following graph that the two populations will continue to grow apart in the next seventy-five years. This divergence should not occur in a normal population such as

Indianapolis.



As is evident in the graph, the two populations are diverging starting in 1970 and are continuing to move apart throughout the projection excluding the minor hiccup around 2035. Should this trend continue, it would be a cause of concern if the populations were ever further than ten percent apart. It also appears that the trend seems to be slowing on the tail end of the graph. Another projection should be completed once more data becomes available with the next census.

6. Final Remarks

This projection seems to accurately project the total population of Indianapolis into the next seventy-five years. There are some characteristics of this projected population that should be watched to see if they are reflected in the

population through the coming years. The falling dependency rates should be watched closely to see if they will fall to the levels predicted. Should this prediction come true, the community will have to pay less towards Social Security in the future which will be unique for the working ages. Another point to check occasionally would be the percentage of population split between males and females. This may not have any affect on the size of the population but it can have unforeseen outcomes on the characteristics of the population besides the size and the dependency rates. To check these points a new projection should be made once more data has become available to the public in the future.

Appendix A

Data Used to Project Populations

Indianapolis		1930			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	27,649	13,818	3.79448%	13,831	3.79805%
5-9	30,274	15,261	4.19073%	15,013	4.12263%
10-14	27,112	13,541	3.71841%	13,571	3.72665%
15-19	28,298	13,398	3.67914%	14,900	4.0916%
20-24	33,155	15,100	4.14652%	18,055	4.95797%
25-34	64,875	30,943	8.49707%	33,932	9.31786%
35-44	58,116	28,562	7.84323%	29,554	8.11564%
45-54	44,908	22,273	6.11625%	22,635	6.21566%
55-64	28,761	14,114	3.87576%	14,647	4.02212%
65 +	21,013	9,637	2.64636%	11,376	3.12389%
Total	364,161	176,647	48.50794%	187,514	51.49206%

Indianapolis		1940			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	24,075	12,270	3.21977%	11,805	3.09792%
5-9	23,447	11,873	3.11569%	11,574	3.03725%
10-14	26,238	13,319	3.49519%	12,919	3.3901%
15-19	31,427	15,139	3.97269%	16,288	4.2742%
20-24	33,702	15,495	4.06611%	18,207	4.77778%
25-34	67,594	31,865	8.36183%	35,729	9.3758%
35-44	60,759	28,990	7.60739%	31,769	8.33664%
45-54	50,427	24,659	6.47087%	25,768	6.76189%
55-64	34,721	16,679	4.37681%	18,042	4.73448%
65 +	28,686	12,787	3.35549%	15,899	4.17212%
Total	381,077	183,076	48.04183%	198,001	51.95817%

Indianapolis		1950			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	42,818	21,639	5.065866%	21,179	4.958177%
5-9	31,841	15,937	3.730982%	15,904	3.723256%
10-14	25,771	12,908	3.021868%	12,863	3.011333%
15-19	25,410	11,764	2.754048%	13,646	3.194640%
20-24	33,778	15,188	3.555635%	18,590	4.352071%
25-34	72,139	34,533	8.084457%	37,606	8.803871%
35-44	62,980	29,973	7.016924%	33,007	7.727208%
45-54	54,557	25,967	6.079086%	28,590	6.693152%
55-64	40,533	19,211	4.497452%	21,322	4.991654%
65 +	37,326	16,124	3.774760%	21,202	4.963561%
Total	427,153	203,244	47.581078%	223,909	52.418922%

Indianapolis		1960			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	57,937	29,374	6.16767%	28,563	5.99738%
5-9	46,649	23,522	4.93892%	23,127	4.85598%
10-14	38,425	19,156	4.02219%	19,269	4.04592%
15-19	30,603	14,268	2.99586%	16,335	3.42986%
20-24	31,179	13,694	2.87533%	17,485	3.67133%
25-34	63,644	31,258	6.56325%	32,386	6.80010%
35-44	61,073	28,983	6.08557%	32,090	6.73794%
45-54	54,809	25,486	5.35130%	29,323	6.15696%
55-64	45,491	20,692	4.34470%	24,799	5.20705%
65 +	46,448	19,475	4.08917%	26,973	5.66353%
Total	476,258	225,908	47.43395%	250,350	52.56605%

Indianapolis		1970			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	99,748	50,833	4.57435%	48,915	4.40176%
5-9	117,876	59,589	5.36229%	58,287	5.24512%
10-14	120,229	61,302	5.51644%	58,927	5.30271%
15-19	104,558	52,950	4.76486%	51,608	4.64409%
20-24	83,704	37,478	3.37257%	46,226	4.15978%
25-34	142,467	69,695	6.27170%	72,772	6.54860%
35-44	130,391	63,412	5.70631%	66,979	6.02730%
45-54	123,767	59,952	5.39495%	63,815	5.74258%
55-64	93,315	44,032	3.96235%	49,283	4.43487%
65 +	95,206	37,442	3.36933%	57,764	5.19806%
Total	1,111,261	536,685	48.29514%	574,576	51.70487%

Indianapolis		1980			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	86,895	44,742	3.90647%	42,153	3.68042%
5-9	92,656	47,285	4.12850%	45,371	3.96139%
10-14	96,417	49,274	4.30216%	47,143	4.11610%
15-19	105,528	52,948	4.62294%	52,580	4.59081%
20-24	103,248	49,254	4.30042%	53,994	4.71427%
25-34	196,743	95,245	8.31594%	101,498	8.86189%
35-44	134,441	65,218	5.69425%	69,223	6.04393%
45-54	119,086	57,390	5.01078%	61,696	5.38674%
55-64	104,664	49,067	4.28409%	55,597	4.85423%
65 +	105,653	41,374	3.61241%	64,279	5.61226%
Total	1,145,331	551,797	48.17795%	593,534	51.82205%

Indianapolis		1990			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	96,303	49,336	3.94744%	46,967	3.75790%
5-9	93,935	47,973	3.83839%	45,962	3.67748%
10-14	87,063	44,625	3.57051%	42,438	3.39552%
15-19	86,706	43,978	3.51874%	42,728	3.41873%
20-24	89,036	42,800	3.42449%	46,236	3.69941%
25-34	235,313	114,718	9.17875%	120,595	9.64897%
35-44	192,487	93,429	7.47538%	99,058	7.92577%
45-54	127,229	61,874	4.95063%	65,355	5.22914%
55-64	102,882	48,346	3.86823%	54,536	4.36350%
65 +	138,868	53,502	4.28077%	85,366	6.83025%
Total	1,249,822	600,581	48.05332%	649,241	51.94668%

Appendix B
Projected Populations

Indianapolis		2000			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	96,377	49,363	3.71479%	47,014	3.53803%
5-9	95,090	48,513	3.65079%	46,577	3.50511%
10-14	88,623	45,391	3.41586%	43,232	3.25340%
15-19	87,394	44,291	3.33313%	43,103	3.24366%
20-24	89,439	43,203	3.25118%	46,236	3.47946%
25-34	280,621	135,540	10.19997%	145,081	10.91800%
35-44	212,167	102,524	7.71539%	109,643	8.25112%
45-54	127,296	61,915	4.65936%	65,382	4.92024%
55-64	103,480	48,606	3.65785%	54,874	4.12951%
65 +	148,339	57,280	4.31057%	91,059	6.85260%
Total	1,328,827	636,626	47.90889%	692,201	52.09111%

Indianapolis		2005			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	96,386	49,366	3.62951%	47,020	3.45703%
5-9	95,322	48,618	3.57450%	46,704	3.43375%
10-14	88,951	45,549	3.34886%	43,402	3.19101%
15-19	87,513	44,343	3.26017%	43,171	3.17400%
20-24	89,516	43,280	3.18201%	46,236	3.39937%
25-34	301,193	144,657	10.63552%	156,536	11.50886%
35-44	219,246	105,712	7.77216%	113,534	8.34728%
45-54	127,304	61,919	4.55245%	65,384	4.80719%
55-64	103,587	48,652	3.57700%	54,935	4.03892%
65 +	151,117	58,443	4.29689%	92,673	6.81355%
Total	1,360,133	650,539	47.82905%	709,595	52.17095%

Indianapolis		2015			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	96,391	49,368	3.50247%	47,024	3.33617%
5-9	95,523	48,707	3.45560%	46,816	3.32142%
10-14	89,245	45,689	3.24145%	43,557	3.09020%
15-19	87,605	44,380	3.14863%	43,225	3.06665%
20-24	89,580	43,344	3.07509%	46,236	3.28029%
25-34	336,702	159,800	11.33729%	176,902	12.55060%
35-44	229,123	110,054	7.80799%	119,069	8.44755%
45-54	127,307	61,922	4.39314%	65,386	4.63888%
55-64	103,670	48,687	3.45420%	54,983	3.90085%
65 +	154,363	59,862	4.24700%	94,501	6.70453%
Total	1,409,510	671,813	47.66286%	737,697	52.33714%

Indianapolis		2025			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	96,392	49,368	3.41751%	47,024	3.25527%
5-9	95,585	48,734	3.37359%	46,851	3.24330%
10-14	89,341	45,733	3.16586%	43,608	3.01876%
15-19	87,629	44,389	3.07286%	43,240	2.99327%
20-24	89,598	43,362	3.00177%	46,236	3.20070%
25-34	364,186	170,908	11.83113%	193,278	13.37969%
35-44	234,952	112,535	7.79028%	122,417	8.47432%
45-54	127,308	61,922	4.28658%	65,386	4.52634%
55-64	103,693	48,697	3.37104%	54,996	3.80710%
65 +	155,877	60,562	4.19244%	95,315	6.59820%
Total	1,444,561	686,210	47.50305%	758,350	52.49695%

Indianapolis		2035			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	96,392	49,368	3.38296%	47,024	3.22237%
5-9	95,596	48,734	3.33948%	46,863	3.21129%
10-14	89,358	45,733	3.13386%	43,625	2.98940%
15-19	87,633	44,389	3.04179%	43,244	2.96329%
20-24	89,598	43,362	2.97143%	46,236	3.16834%
25-34	376,584	170,908	11.71152%	205,676	14.09404%
35-44	236,913	112,535	7.71152%	124,378	8.52306%
45-54	127,308	61,922	4.24324%	65,386	4.48058%
55-64	103,696	48,697	3.33696%	54,999	3.76886%
65 +	156,234	60,562	4.15006%	95,672	6.55595%
Total	1,459,314	686,210	47.02282%	773,103	52.97718%

Indianapolis		2045			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	96,392	49,368	3.32421%	47,024	3.16641%
5-9	95,610	48,744	3.28218%	46,866	3.15576%
10-14	89,382	45,751	3.08067%	43,630	2.93786%
15-19	87,637	44,392	2.98915%	43,245	2.91191%
20-24	89,605	43,369	2.92030%	46,236	3.11332%
25-34	398,404	183,761	12.37363%	214,643	14.45306%
35-44	240,173	114,667	7.72113%	125,506	8.45101%
45-54	127,308	61,922	4.16956%	65,386	4.40277%
55-64	103,700	48,700	3.27921%	55,000	3.70347%
65 +	156,892	61,065	4.11184%	95,827	6.45255%
Total	1,485,104	701,740	47.25188%	783,364	52.74812%

Indianapolis		2055			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	96,392	49,368	3.30017%	47,024	3.14351%
5-9	95,612	48,744	3.25849%	46,868	3.13302%
10-14	89,385	45,753	3.05848%	43,632	2.91673%
15-19	87,637	44,392	2.96754%	43,245	2.89086%
20-24	89,606	43,370	2.89921%	46,236	3.09080%
25-34	408,022	187,108	12.50782%	220,915	14.76777%
35-44	241,223	115,075	7.69259%	126,148	8.43278%
45-54	127,308	61,922	4.13940%	65,386	4.37093%
55-64	103,701	48,700	3.25551%	55,001	3.67670%
65 +	157,038	61,143	4.08731%	95,895	6.41039%
Total	1,495,924	705,575	47.16651%	790,349	52.83349%

Indianapolis		2065			
Age	Total	Male	% of Pop	Female	% of Pop
Under 5	96,392	49,368	3.28463%	47,024	3.12871%
5-9	95,613	48,745	3.24316%	46,868	3.11829%
10-14	89,386	45,753	3.04411%	43,633	2.90304%
15-19	87,637	44,392	2.95357%	43,245	2.87726%
20-24	89,606	43,370	2.88557%	46,236	3.07625%
25-34	414,447	189,247	12.59129%	225,200	14.98334%
35-44	241,807	115,296	7.67103%	126,511	8.41722%
45-54	127,308	61,922	4.11991%	65,386	4.35035%
55-64	103,701	48,700	3.24018%	55,001	3.65939%
65 +	157,104	61,180	4.07055%	95,924	6.38215%
Total	1,503,001	707,973	47.10400%	795,027	52.89600%

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