9. ANALYSIS OF THE FATALITY PROJECTIONS

In this chapter, we offer two views on the importance of various determinants of elderly driver fatalities. The first takes the perspective of the four major components of the projections: growths in population, increases in VMT, growth in the percent of the elderly population driving, and decreases in crash risk. We report these contributions to the fatality projections in Section 9.1. None of these major components is directly amenable to policy instruments, but many of the variables in the equations used to project those components do have some susceptibility to adjustment by public policy. In Section 9.2 we report the sensitivity of driver fatalities in 2025 to alternative scenarios based on alternative growth assumptions of each of the independent variables in the component equations, one at a time. Thus, we can see how sensitive the driver fatality projections are to slight changes in, say, income or health status. Pursuing the findings of the contributions and sensitivity analyses of this chapter, Section 9.3 reports the consequences of suppressing the effects of unspecified technological and institutional changes on VMT and on driver fatalities. A spreadsheet tool was developed to let users conduct scenario analyses of particular interest to themselves by modifying growth assumptions used in our projections. The guide to use this tool is in Section 9.4.

9.1 CONTRIBUTIONS OF INDIVIDUAL COMPONENTS TO DRIVER FATALITY PROJECTIONS

Before reporting the contributions of the major projection components to driver fatalities in 2025, we detail the method of calculating these contributions. Section 9.1.2 offers a graphical presentation of the various components' percentage contributions to driver fatalities.

9.1.1 Computations

The projection of fatalities is a function of the projections of non-institutionalized population, the percent of the population that will drive, the average miles driven per year by an older driver, and the fatal crash rate per hundred million miles driven. To calculate the percentage contributions of the four major components to the projections of total fatalities it is necessary to take account of the multiplicative structure of the projections. The general method of making these calculations is to compare the number of fatalities projected under different circumstances. It is possible to hold the projection of any one of these components, or any combination of them, at their 1995 levels, which we call "flat-lining" in the following explanation. Let A be the projected fatalities derived from the full projection (i.e., when no component projection is flat-lined), and let B be the projected fatalities when all four projection components are held at their 1995 values (i.e., when all four are flat-lined). Then A/B is the ratio of the full contribution of all four projection components to the flat-lined figures. Next, define a separate variable for the fatality projection derived under the flat-lining of three of the four contributing projections. Let C be the projection obtained flat-lining all components but the projected elderly population; let D be the corresponding projection derived from flat-lining everything but the projected older drivers, E the projection flat-lining all but VMT, and F the projection from flat-lining all but crash risk.

Dividing C, D, E, and F by B gives each component's contribution to the full projection: $A/B=(C/B)(D/B)(E/B)(F/B)$. To simplify the notation, let $C/B=G$, $D/B=H$, $E/B=I$, $F/B=J$, and $A/B=X$. Using this new notation, the expression for the projection in terms of the contributions of individual components is $X=GHIJ$. To express the total projection as a sum of the components, express the equation in logarithmic form: $\log X = \log G + \log H + \log I + \log J$. Finally, to express the individual contributions as shares of the full projection, divide the entire equation by log X: $1 = (\log G)/(\log X) + (\log H)/(\log X) + (\log I)/(\log X) + (\log J)/(\log X)$, where (log **!**)/(log X) is the percent contribution of factor **!**, which, of course, will be population, VMT, driver, and risk.

9.1.2 Contributions to Driver Fatalities

The dampening effect on projected fatalities of falling crash risk over time simply yields a negative contribution to the risk projection, which means that if risk were flat-lined, the projected fatalities would be larger than they are when the decrease in crash risk is factored into the projection. This negative contribution of crash risk also means that, while the sum of the component contributions to driver fatalities will always be 1, the components themselves have the potential of attaining values greater than one, with the sum of the positive terms, or more simply, those components (VMT, driver, and population) whose changes over time increase the number of fatalities will always sum to a value greater than one.

As we can observe in Figure 9.1, by far the largest contributor to the growth in male driver fatalities is population. This should come as no great surprise given that the elderly male non-institutionalized population is expected to double over the projected time frame, while VMT and percentages of people who drive are projected to increase at less substantial rates. The driver projections show up as a mere blip for the younger age groups simply because these groups already have driver rates near 100%. As such, no substantial increases in these rates were possible when projecting, meaning that any increase in fatalities over the projected time frame cannot be attributed in great part to an increase in the percent of the male population that drives. This effect lessens as we move to the oldest age groups. VMT is somewhat similar to driver, with the younger groups already approaching a theoretical limit on the feasible amount of annual VMT, translating into a smaller relative contribution to fatalities.

The relative component contributions to female driver fatalities vary greatly from those of male fatalities. Non-institutionalized female population is expected to increase dramatically, but it is not expected to double as it is for men. In addition, projections of VMT and percentage of the population that drives are slightly higher for women then for men when comparing the ratio of 2025 projections to 1995 observed values. As one can see in

Figure 9.2, the combination of these effects presents a picture that is different from that presented by the component contributions of male fatalities. Population plays a far lesser role, while the roles of VMT and driver are much more prominent. Overall, while the contributions of risk and driver are relatively small for some age groups, no one component truly dominates the projection of female driver fatalities in the way that population dominates the projection of male fatalities.

9. 2 SENSITIVITY ANALYSIS

This section addresses how alternative projected paths of the independent variables in the independent component equations (VMT, percent of drivers, crash risk) affect the projections of older driver fatalities. Those variables are household income, employment status, health status, presence of other drivers in the household, location in an urban area, and seat belt use. Although we projected fatalities for each fifth year in the projection period, we considered it sufficient to study the sensitivity of the fatalities at the terminal date. Alternative scenarios were generated by altering the projected growth path of each independent variable, one at a time. Table 9.1 reports the total impacts on the number of elder driver fatalities in 2025 of changes in each of the independent variables, through all of the components by which they have their effects. The numbers in Table 9.1 are in the form of elasticities, which identify the percent change in the dependent variable, elder driver fatalities in this case, per one-percent change in the independent variable. Since elasticities are dimensionless numbers they are comparable across cases involving greatly differing magnitudes. Consequently these elasticities are directly comparable across independent variables and across projection components.

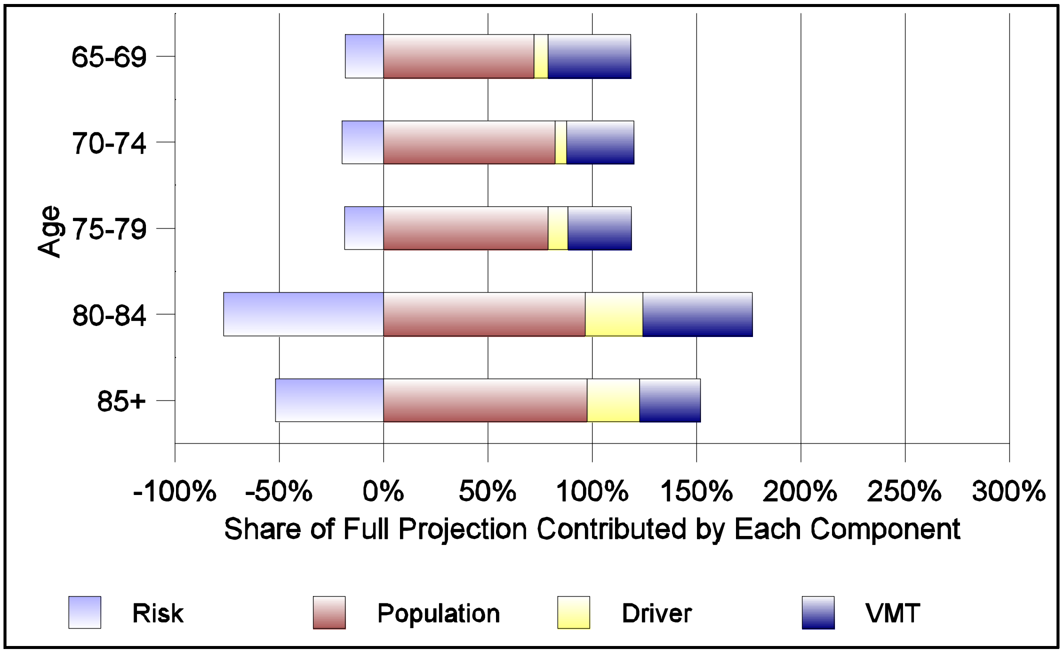


Figure 9.1. Component Contributions to 2025 Driver Fatality Projections, Men

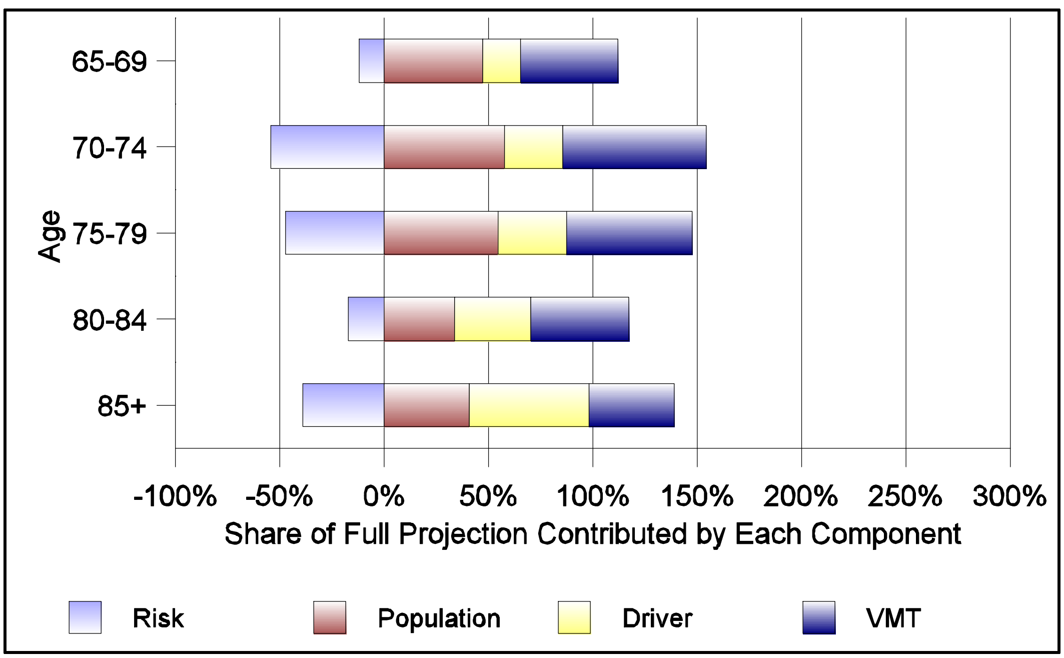


Figure 9.2. Component Contributions to 2025 Driver Fatality Projections, Women

Table 9.1. Sensitivity of Total Driver Fatalities to Perturbations in Independent Variables: Elasticities of Projected Driver Fatalities in 2025

Age Group	Income	Employment status	Presence of other drivers in household	Health status	Urban location	Seat belt use
			Men			
65-69	-0.06	0.50	0.03	0.02	-0.06	-0.57
70-74	-0.14	0.31	-0.09	1.39	-0.04	-0.91
75-79	-0.04	0.55	-0.36	0.43	-0.03	-0.57
80-84	0.02	0.64	-0.32	0.35	-0.03	-0.52
85+	-0.003	0.005	-0.26	0.12	-0.08	-1.23
			Women			
65-69	-0.08	0.66	-0.44	0.17	-0.06	-0.57
70-74	-0.09	0.79	-0.53	0.44	-0.07	-0.91
75-79	-0.04	0.43	-0.65	0.73	-0.06	-0.57
80-84	-0.55	0.44	-0.70	0.60	-0.28	-0.52
85+	-0.02	0.46	-0.17	1.24	-0.19	-1.23

Some of the independent variables have effects on more than one component, so Tables 9.2 through 9.7 report the underlying elasticity structure of the individual component equations. Thus, while the reader can see the final impact of each of the independent variables in Table 9.1, the routes of effect can be traced with the elasticities reported in Tables 9.2 through 9.7. As an example of the difference between an independent variable's effect on the components of the fatality projection and on the final fatality projection, consider how an increase in income works: it increases VMT and the percent of the population driving, both of which increase exposure to traffic crashes, but it reduces crash risk by more than it increases the other two components, leaving a small, negative effect on fatalities.

9.2.1 Total Impacts on Older Driver Fatalities

As we noted in the example in the section introduction, income has a small, dampening effect on older driver fatalities, although the impact for 80-84 women is sizeable. Thinking primarily of the effect of income on the demand for VMT and for being a driver, this result is a surprise, but it arises through the route of income's dampening effect on crash risk. It just happens, for every age/gender group except 80-84 men, that the direct effect of income on crash risk outweighs the indirect effects on the two components of exposure to crashes. Considering the error bounds on the original regression coefficients, an income elasticity of fatal driver crashes of -0.02 is not a great concern however; its "true value" could be +0.01.

The elasticities reported in the column labeled "employment status" in Table 9.1 show the effect on an entire population of an increase in labor force participation among that group. Thus, if the percent of the 65-69 year-old men in the labor force were to increase by one percent (a percent of a percent, note), the projection is for a 0.50% increase in the number of driver fatalities among that group. With the exception of 85+ men, these elasticities are large (that for 70-74 men, at 0.31, some readers might consider not particularly large). These sensitivities take on added significance when we consider that the Social Security retirement age for men born in 1960 and later recently has been increased from 65 to 67. This result says to expect a consequence in terms of additional driver fatalities associated with additional work trips among this cohort. This effect works through both the VMT and driver percentage components, operating in the same direction.

Perturbing "having another driver in the household" is equivalent to changing the proportion of elderly households that have more than one driver. Thus, if male life expectancies were to increase relative to female, bringing their expectancies closer to women's, we would see a larger percentage of women with another driver in the household, and possibly the same effect among the male age groups. This change has a small, positive effect on 65-69 males, again plausible as a statistical error phenomenon, but otherwise has a material, dampening effect on driver fatalities among all age groups and both genders. Many of the elasticities are of substantial magnitude, particularly among the female age groups.

Improved health status has the counterintuitive effect of increasing older driver fatalities, and by substantial percentages per unit improvement in health as reported by these elasticity values. There is an equally natural intuitive understanding of this result inasmuch as people with fewer activity limitations are more likely to be mobile and thence experience greater exposure to traffic crashes. Again, this operates through both VMT and the percent of elderly that continue driving.

Urban location has a small, but rather consistent, dampening effect on driver fatalities, although the magnitudes for the two oldest groups of women are considerably larger. Clearly this reflects the greater availability of substitutes for driving in cities. One can interpret these elasticities as the impact of a 1% increase in the percent of the total (or regional) population living in cities on the number of elder driver fatalities. As the projection model is structured, this effect derives strictly from the driver percentage component of exposure, without an additional channel through VMT.[1]

The seat-belt-use elasticities are encouraging in that they are sizeable as well as negative. They are the same magnitude for both genders because no gender difference was detectable in the regression coefficients of seat belt use in the crash rate model. Whether this effect would survive more detailed, individual information on seat belt use by age, we cannot say, but it certainly is worth exploration.

[1] Recall that the exclusion of a substitute-for-driving variable in the VMT demand equation was the consequence of data limitations in an early NPTS. Location in a SMA was not considered an adequate indicator of substitutes for VMT, and information on proximity to, or otherwise availability of, public transit was unavailable in the 1983 NPTS. Location in a SMA was considered an adequate indicator of substitutes for driving at all.

9.2.2 Sensitivity of the Projection Components to Individual Variables

In Section 9.2.1 we noted that some independent variables worked their effects on total driver fatalities through several routes. The best example of this is income, which affects all three of the projection components constructed in this research (population growth projections, of course, being supplied by the U.S. Census Bureau). Each of the following six tables reports the sensitivity of the projections of each major component to one of the independent variables. A final column at the right of each table reports the total effect of the variable on driver fatalities. Having alluded to the differential effects of some independent variables on the separate projection components in the discussion of the sensitivity of driver fatalities, we provide no further examination of the elasticities of Tables 9.2 through 9.7.

9.3 A LOWER BOUND FOR DRIVER FATALITIES AND VMT

We have noted that we believe our driver fatality projections to be as high as is reasonable, principally because the elderly VMT projections are as high as could be expected. We do not believe that annual VMT per capita will exceed the projections in Figure 7.3 and the accompanying appendix tables. The contributions of income growth and growth in elderly labor force participation are solidly established, but the time trend terms in the projection equations, as noted in Chapter 7, contribute substantial, in some age/gender groups even dominant, proportions of the growth in VMT projected to 2020. Although the empirical basis of the magnitude of the time trend coefficients is indisputably comprised of

Table 9.2. Sensitivity of 2025 Projections to Perturbations in Income Growth

Age group	Arc Elasticity			
	VMT	Percent of population driving	Fatal accident rate	Total fatalities
Men				
65-69	0.18	0.03	-0.26	-0.06
70-74	0.23	0.04	-0.42	-0.14
75-79	0.24	0.04	-0.32	-0.04
80-84	0.12	0.01	-0.13	0.02
85+	0.27	0.04	-0.35	-0.003
Women				
65-69	0.11	0.02	-0.21	-0.08
70-74	0.12	0.08	-0.29	-0.09
75-79	0.07	0.03	-0.14	-0.04
80-84	0.60	0.28	-1.45	-0.55
85+	0.06	0.06	-0.14	-0.02

Perturbation: 10 % increase in the rate of increase

Table 9.3. Sensitivity of 2025 Projections to Perturbations in Projected Employment Status

Age group	Arc Elasticity			
	VMT	Percent of population driving	Fatal accident rate	Total driver fatalities
Men				
65-69	0.49	0.002		0.50
70-74	0.29	0.01		0.31
75-79	0.55	0.004		0.55
80-84	0.63	0.01		0.64
85+	-	0.004		0.005
Women				
65-69	0.66	0.01		0.67
70-74	0.78	0.01		0.79
75-79	0.42	0.01		0.43
80-84	0.43	0.01		0.44
85+	0.43	0.03		0.46

Perturbation:10 % increase in the rate of growth

Table 9.4. Sensitivity of 2025 Projections to Perturbations in Projected Percentage of Elderly Households with Other Drivers

Age group	Arc Elasticity			
	VMT	Percent of population driving	Fatal accident rate	Total driver fatalities
Men				
65-69	-	0.03		0.03
70-74	-0.10	0.01		-0.09
75-79	-0.34	-0.02		-0.36
80-84	-0.31	-0.01		-0.32
85+	-0.17	-0.07		-0.26
Women				
65-69	-0.41	-0.04		-0.44
70-74	-0.45	-0.08		-0.53
75-79	-0.58	-0.08		-0.65
80-84	-0.53	-0.16		-0.70
85+	-	-0.17		-0.17

Perturbation: 1.67% increase per 5 year period

Table 9.5. Sensitivity of 2025 Projections to Perturbations in Projected Trend in Health Status

Age group	Arc Elasticity			
	VMT	Percent of population driving	Fatal accident rate	Total driver fatalities
Men				
65-69	-	0.02		0.02
70-74	1.23	0.13		1.39
75-79	0.36	0.07		0.43
80-84	0.28	0.07		0.35
85+	0.12	-0.001		0.12
Women				
65-69	0.12	0.06		0.17
70-74	0.25	0.19		0.44
75-79	0.54	0.19		0.73
80-84	0.39	0.21		0.60
85+	1.27	-0.03		1.24

Perturbation: 1.25% increase per 5-year period

Table 9.6. Sensitivity of 2025 Projections to Perturbations in Projected Urbanization

Age group	Arc Elasticity			
	VMT	Percent of population driving	Fatal accident rate	Total driver fatalities
Men				
65-69		-0.06		-0.06
70-74		-0.04		-0.04
75-79		-0.03		-0.03
80-84		-0.03		-0.03
85+		-0.08		-0.08
Women				
65-69		-0.06		-0.06
70-74		-0.07		-0.07
75-79		-0.06		-0.06
80-84		-0.28		-0.28
85+		-0.19		-0.19

Perturbation: 10% increase from 1995 to 2025

Table 9.7. Sensitivity of 2025 Projections to Perturbations in Projected Seat Belt Use

Age group	Arc Elasticity			
	VMT	Percent of population driving	Fatal accident rate	Total driver fatalities
Men				
65-69			-0.57	-0.57
70-74			-0.91	-0.91
75-79			-0.57	-0.57
80-84			-0.52	-0.52
85+			-1.23	-1.23
Women				
65-69			-0.57	-0.57
70-74			-0.91	-0.91
75-79			-0.57	-0.57
80-84			-0.52	-0.52
85+			-1.23	-1.23

Perturbation: 96% seat belt usage in 2025 the changes in vehicle technology, transportation infrastructure, the spatial structure of American cities, changes in family structure, and changing individual roles in society over the period from 1977 to 1995, we were unable to separate those effects into distinct, quantitative variables. Extrapolating from historical time trends is notoriously dangerous, although such practice probably yields under-estimates as often as over-estimates, depending on the subject. Our method of avoiding simple, linear extrapolation of historical time trends was to cap the VMT projection of the group reasonably expected to have the largest annual VMT, 65-69 year-old males, at their lifetime peak, and let all other time trends be adjusted proportionally to the adjustment required in the 65-69 male time trend coefficient to create the cap on VMT. We recognize that this is likely to yield a high estimate of VMT, but the procedure is the least judgmental adjustment that can be made on the time trends without further information on the distinct forces those trends represent. It seems reasonable to label these projections of VMT and the corresponding driver fatality projections as upper bounds.

A logical lower bound, using the information available to us, is to eliminate the "black-box" time effect altogether. The implications of this move are very strong: no further technological change that would encourage more driving, no infrastructure changes that would do the same, no further effects of changing urban/suburban spatial configurations, no further effects of social changes other than the presence of another driver in the household. All of these assumptions are probably wrong, but by how much we cannot know with current information. But, knowing that some effects coming from these sources are likely to increase elderly VMT over the next quarter century, and setting them to zero offers a logically defensible lower bound on both VMT and on fatalities.

Section 9.3.1 projects VMT without time effects and offers several comparisons with the previous projections. This is also a convenient place to examine the effect of improving health status on VMT, inasmuch as the previous projection held health status at 1995 levels. Section 9.3.2 uses the lower-bound VMT projection to project a corresponding lower bound on driver fatalities.

9.3.1 The Effect of Time on VMT Projections

The substantial contribution of the technological and institutional changes represented in the time effect of the projections of VMT makes it worthwhile to derive a lower bound case in which none of those changes occur, particularly since we cannot attribute the effects of time to specific developments. Table 9.8 reports the 2025 projections of VMT, at the national level, for men and women with and without any time effects. Eliminating the time effects drops the men's VMT projections by about 13% and those of women by 35%. Figures 9.3 and 9.4 show the upper and lower bounds of VMT, graphically depicting the difference time makes in these projections.

This is a useful opportunity to compare the effects of improving elderly health on VMT relative to the effects of the undifferentiated technical and institutional changes represented by time. Table 9.8 also reports the 2025 VMT for the scenario with no time effects but the health status indicator increasing at ½% per year from 1995 through 2025. The base-case projections developed otherwise have kept the value of the health status variable constant at its 1995 level. Because the 65-69 year-old men's coefficient for health status was zero (statistically), there is no effect on that group. The remaining age groups of men show a declining impact of improving health status, beginning with over a 9% impact on the 2025 VMT projection for 70-74 men and falling to somewhat over 1% for the 85+ group, relative to a no-time effects projection for 2025. For women, the pattern by age is much the opposite, with a 1% increase in 2025 VMT attributable to improvement in health status among 65-69 women, increasing to a 15% difference in the 85+ group.

Table 9.8. VMT Projections for 2025 With and Without Pure Time Effects and with Improving Health Status, National Level

Men

Age group	Observed 1995	With time 2025	Without time 2025	Change	Health improvements, no time effect, 2025	Change
65-69	12,419.43	18,787.30	16,279.84	-13.35%	16,279.84	0.00%
70-74	10,291.61	13,706.88	11,836.52	-13.65%	12,945.25	9.37%
75-79	9,422.77	12,709.24	10,981.64	-13.59%	11,404.77	3.85%
80-84	6,269.21	8,622.38	7,455.89	-13.53%	7,677.05	2.97%
85+	5,165.97	6,558.96	5,662.48	-13.67%	5,735.99	1.30%

Women

Age group	Observed 1995	With time 2025	Without time 2025	Change	Health improvements, no time effect, 2025	Change
65-69	5,841.61	11,275.70	7,324.45	-35.04%	7,417.75	1.27%
70-74	5,054.79	9,435.52	6,118.64	-35.15%	6,290.24	2.80%
75-79	4,288.47	7,317.29	4,713.94	-35.58%	5,003.88	6.15%
80-84	3,805.26	6,818.64	4,398.60	-35.49%	4,590.16	4.36%
85+	2,780.62	4,946.91	3,188.68	-35.54%	3,667.11	15.00%

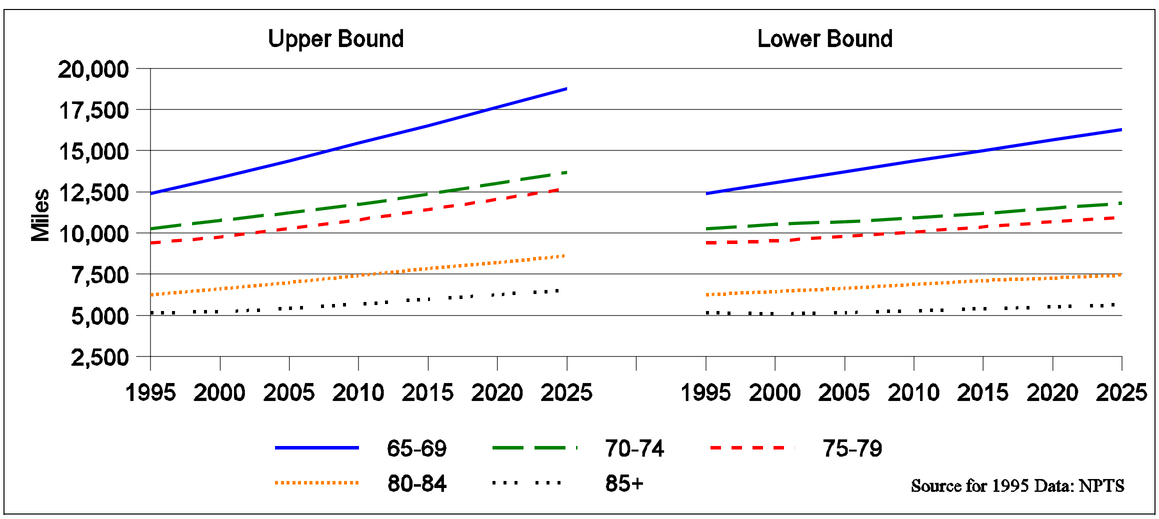


Figure 9.3. Projected VMT, Men (Upper and Lower Bounds)

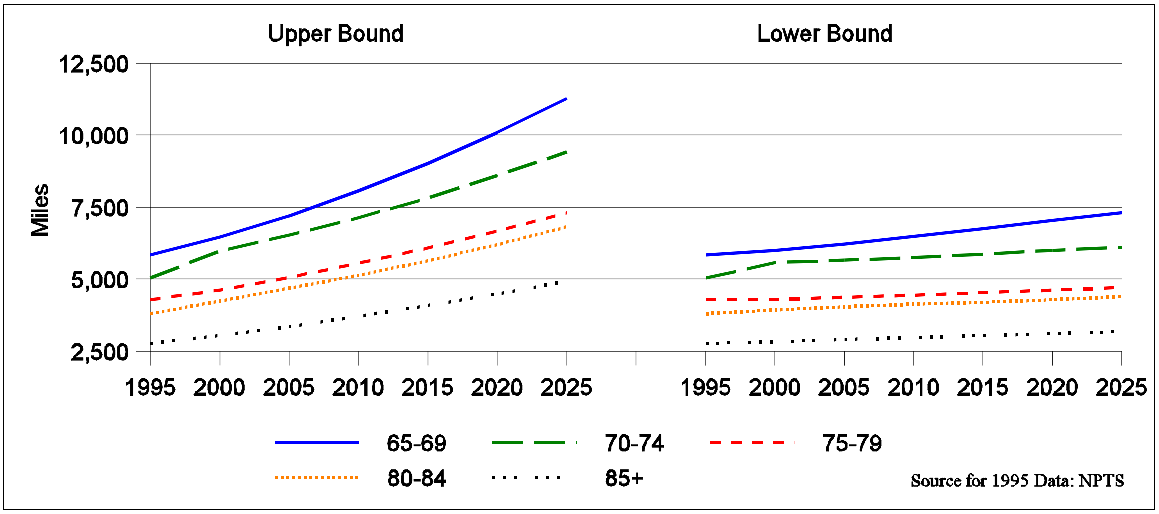


Figure 9.4. Projected VMT, Women (Upper and Lower Bounds)

9.3.2 Driver Fatalities with Lower Bounded VMT

A lower bound on driver fatality projections uses the lower-bounded VMT projections with no time effects. Table 9.9 reports 2025 driver fatality projections with and without time effects in VMT. Compared to the 1995 reported fatalities, the inclusion or exclusion of time effects makes a second-order difference, at least for men. Without time effects, total male driver fatalities increase by 151% by 2025, compared to 190% with those effects. For women the difference is greater: 143% increase without time versus 275% with.

Using the lower-bounded VMT has interesting effects on the relative contributions of the major components to driver fatalities, as depicted in Figures 9.5 and 9.6, compared with Figures 9.1 and 9.2. Eliminating the time effect on VMT alone substantially affects the contribution of driver risk, in both men and women. The greatest dampening effect on male fatalities made by risk, with time effects on VMT, are in the two oldest age groups; without time effects, the greatest effect is on the two youngest groups. With women, the pattern is less easily summarized, but by eliminating the time effect in VMT, the effect of risk rises in the youngest group and drops in the next-youngest group. The effect of risk stays about the same in 75-79 group, shoots even farther up in 80-84, and drops sharply in the 85+ group.

Table 9.9. Comparison of Driver Fatality Projections for 2025, with Upper-bounded and Lower-bounded VMT Projections, National Level

Age group	Men, with upper-bounded VMT	Men, with lower-bounded VMT	Men, 1995 reported	Women, with upper-bounded VMT	Women, with lower-bounded VMT	Women, 1995 reported
65-69	2424	2101	805	1446	940	316
70-74	1735	1498	733	1067	692	362
75-79	1996	1725	613	957	616	322
80-84	1545	1336	469	865	558	196
85+	706	610	270	559	361	106
Total	**8406**	**7270**	**2890**	**4894**	**3167**	**1302**

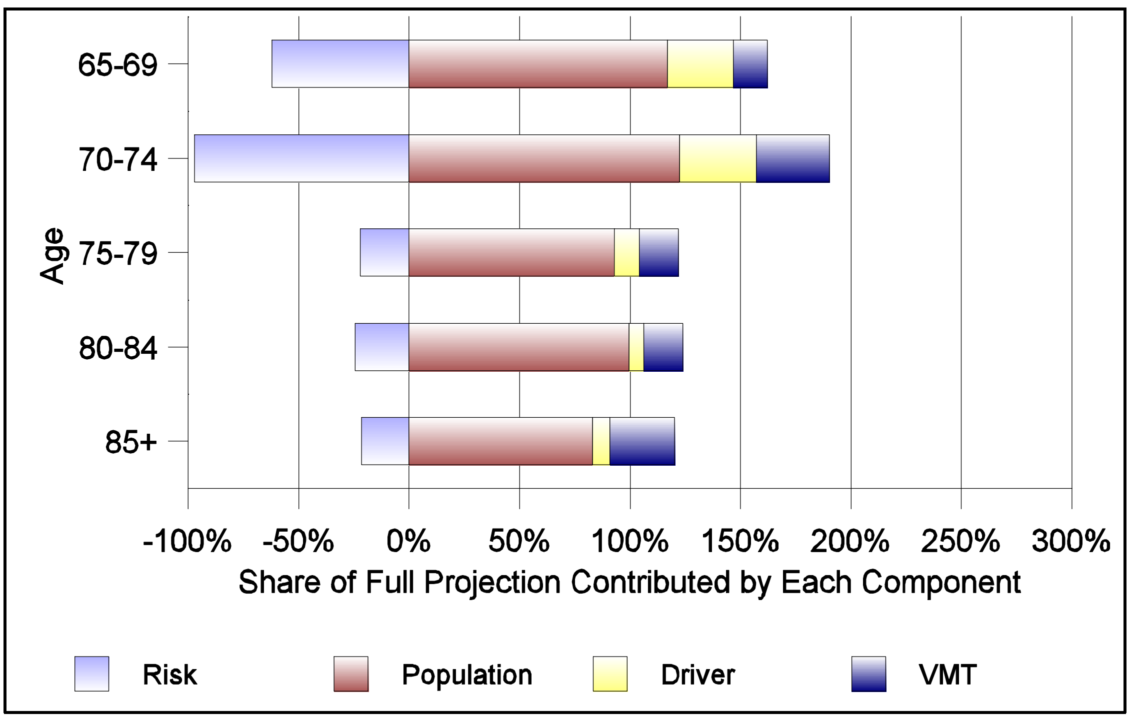
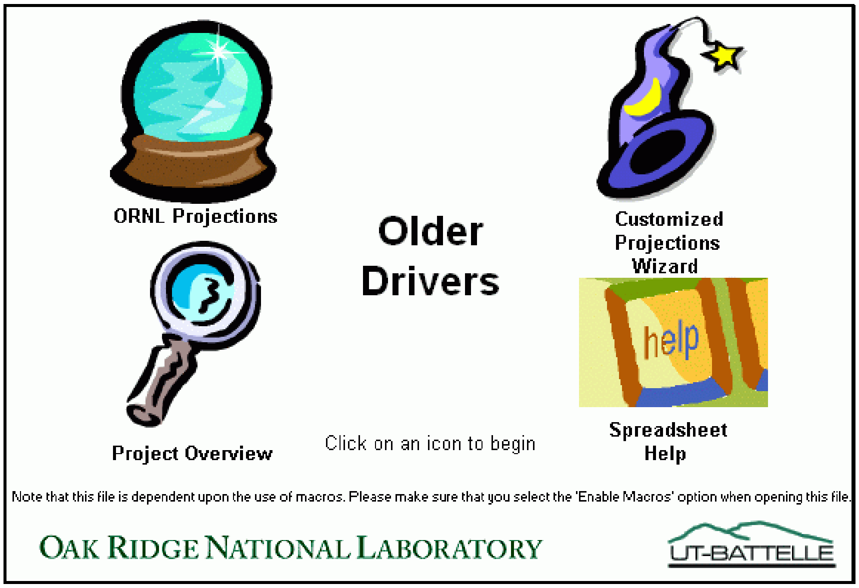


Figure 9.5. Component Contributions to Driver Fatality Projections Using Lower-bounded VMT, Men

Figure 9.6. Component Contributions to Driver Fatality Projections Using Lower-bounded VMT, Women

9.4 USER INTERFACE FOR "WHAT-IF" ANALYSIS

The tool for performing "what-if" analysis on the elder driver projections is an Excel 97/2000 spreadsheet. A copy of the spreadsheet can be obtained on the internet via the older drivers link at http://www-cta.ornl.gov or by contacting Tim Reuscher at (865) 574-8690. This spreadsheet utilizes Visual Basic macros, which guide the user through decisions to alter the levels of independent variables used in driver, VMT, and risk projections. The main sheet that the user sees upon opening the spreadsheet is presented below.

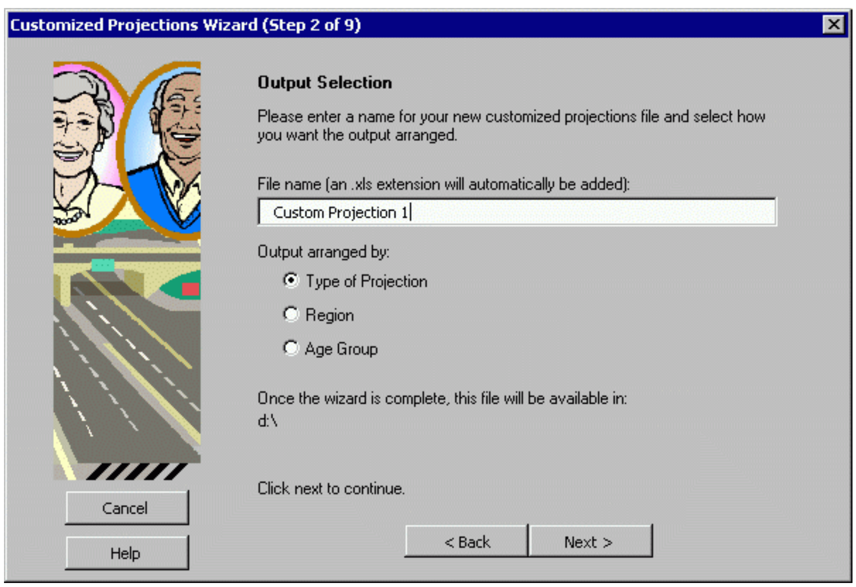


Clicking on the "ORNL Projections" link will give the user the option to view the projections presented in the Appendices of this report, displayed by projection type, region, or age group. The " Customized Projections Wizard," discussed in more detail later, will let the user perform the "what-if" analysis previously described. The "Project Overview" and "Spreadsheet Help" links provide the user with background information on the project and basic help in using the older drivers spreadsheet.

9.4.1 Customized Projections Wizard

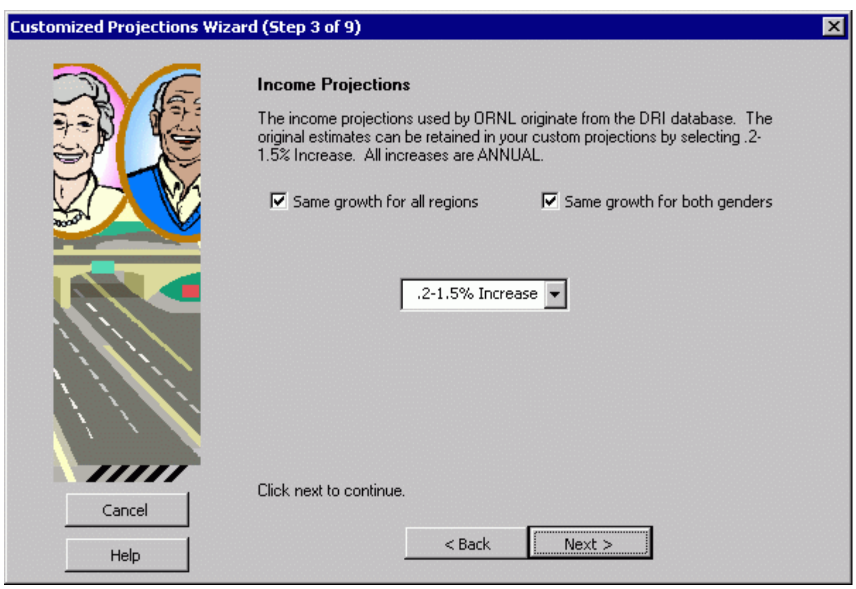
The " Customized Projections Wizard" is a simple, step-by-step procedure for altering the levels of independent variables (income, "other driver," employment status, urban population percentages, health status, and seatbelt usage levels) used in projecting the percentage of the population that drives, how much the elderly drive, and their fatality risk per mile driven. Step 1 is a simple introduction to the process. Step 2 requires the user to name the new file which will be created as a result of the wizard, and allows the user to define how the output will be presented.

Step 1: Introduction

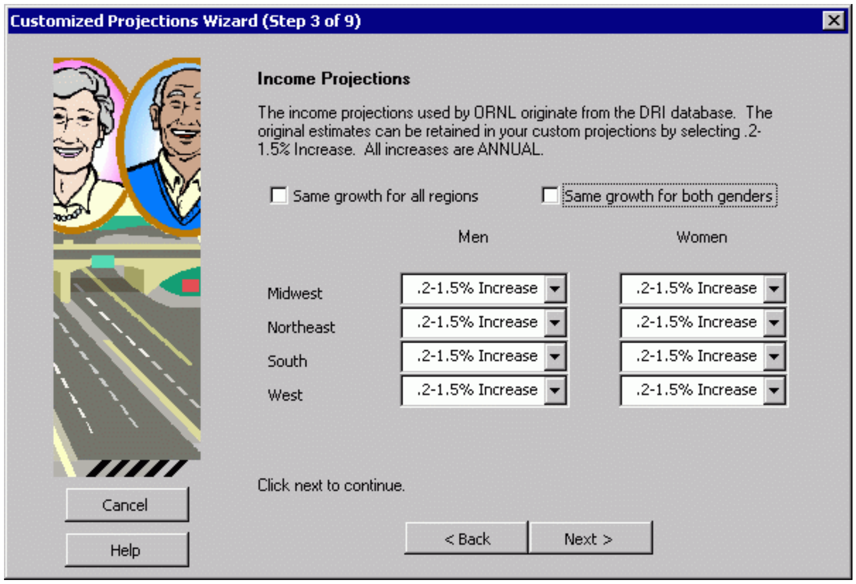


Step 2: Decisions on file naming and arrangement of output

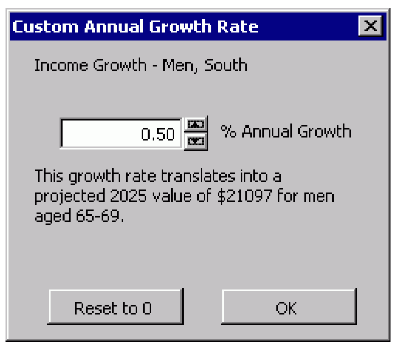
The next six screens in the wizard allow the user to change the levels of independent variables. These variables can be changed to allow for three pre-determined levels of growth or decline, with the second option always representing the level ORNL chose. The variables can also be changed at a "Custom Growth" rate chosen by the user. In addition, the nature of some variables allows for them to be changed at the regional and gender levels, meaning the user can select different levels of growth for each gender or region. Income and health status can have different levels for region and/or gender, while "other driver" and employment status can only differ by gender, with urban status only allowed to differ by region. These patterns follow the data used by ORNL for our projections. The following screens show how one can modify the various levels of the independent variables. The first screen shows what the user first sees in step 3. Clicking on the check boxes that say "Same growth for all regions" and "Same growth for both genders" will give the user the second screen below (Step 3a), which lets one change income at different levels for region and gender. Selecting the option "Custom Growth" from one of the drop-down lists will give the user the third screen (Step 3b), and clicking on the up or down arrows increases or decreases the value of the growth rate while the text below the box illustrates the effects of such a change.



Step 3: Modifying Income levels



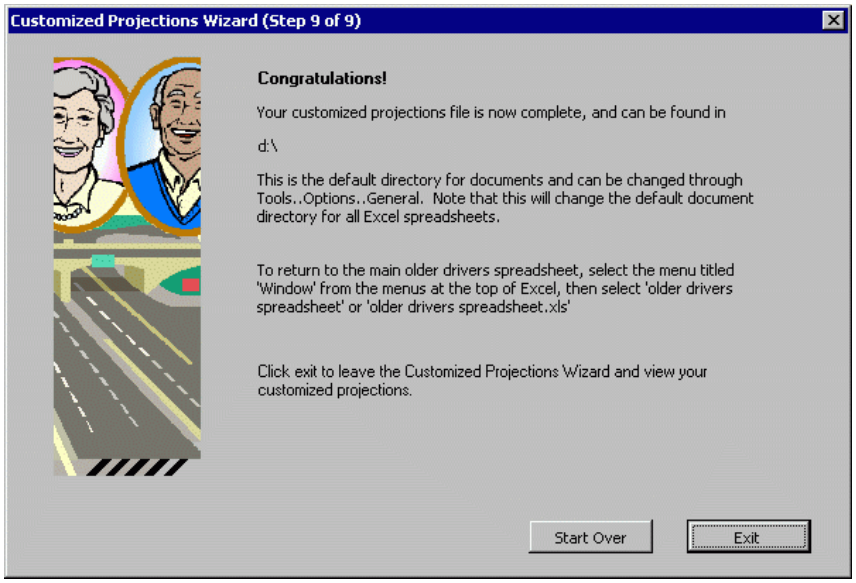
Step 3a: Modifying Income at different levels for regions and genders



Step 3b: An example of choosing a "Custom Growth" rate

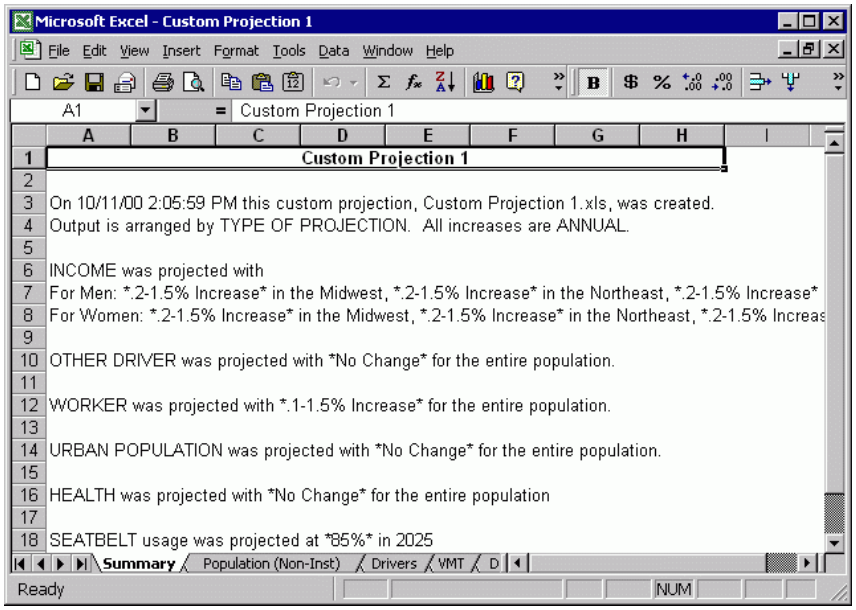
The steps are similar for "other driver," employment status, urban population, health status, and seatbelt use (Steps 4-8). When one clicks on the "Next" button of the health status screen, Excel, using the older driver spreadsheet macro instructions, calculates the effects of the user's modifications on the various projections and creates a file with the name given by the user in step two. Once Excel is finished, which usually takes a minute or two (and perhaps longer depending on the speed of the computer), a "Congratulations" screen

(Step 9) will pop up, indicating that the process is complete. This screen will indicate where one can find the file just created on his or her computer.

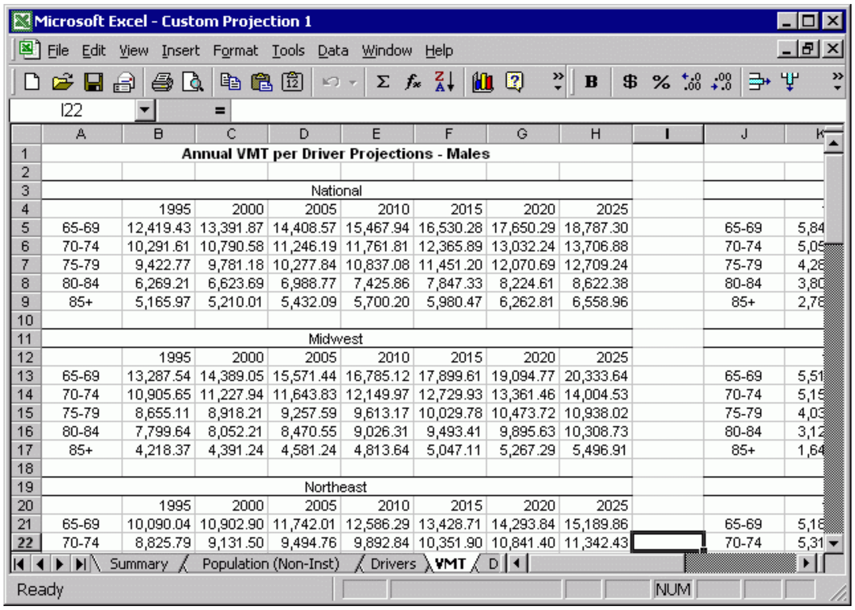


Step 9: The final confirmation

Clicking the Exit button will finish the wizard and will take the user into the newly created "Customized Projections" file. The first sheet one sees is the Summary sheet (below) which details exactly which modifications were made to produce the projections contained in the file.



Clicking on one of the sheet tabs will let the user view the various projections made as a result of the wizard. Since this particular projection specified the output arranged by "Type of Projection," the visible tabs include Population, Drivers, VMT, and the risk and fatality measures.



Annual VMT per Driver Projections - Males

	1995	2000	2005	2010	2015	2020	2025
National							
65-69	12,419.43	13,391.87	14,408.57	15,467.94	16,530.28	17,650.29	18,787.30
70-74	10,291.61	10,790.58	11,246.19	11,761.81	12,365.89	13,032.24	13,706.88
75-79	9,422.77	9,781.18	10,277.84	10,837.08	11,451.20	12,070.69	12,709.24
80-84	6,269.21	6,623.69	6,988.77	7,425.86	7,847.33	8,224.61	8,622.38
85+	5,165.97	5,210.01	5,432.09	5,700.20	5,980.47	6,262.81	6,558.96
Midwest							
65-69	13,287.54	14,389.05	15,571.44	16,785.12	17,899.61	19,094.77	20,333.64
70-74	10,905.65	11,227.94	11,643.83	12,149.97	12,729.93	13,361.46	14,004.53
75-79	8,655.11	8,918.21	9,257.59	9,613.17	10,029.78	10,473.72	10,938.02
80-84	7,799.64	8,052.21	8,470.55	9,026.31	9,493.41	9,895.63	10,308.73
85+	4,218.37	4,391.24	4,581.24	4,813.64	5,047.11	5,267.29	5,496.91
Northeast							
65-69	10,090.04	10,902.90	11,742.01	12,586.29	13,428.71	14,293.84	15,189.86
70-74	8,825.79	9,131.50	9,494.76	9,892.84	10,351.90	10,841.40	11,342.43

Customized Projections file