**02 DEPARTMENT OF PROFESSIONAL AND FINANCIAL REGULATION**

**031 BUREAU OF INSURANCE**

## Chapter 340: MORTALITY TABLES FOR USE IN DETERMINING MINIMUM RESERVES AND NONFORFEITURE BENEFITS

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### Article I. Authority

 This rule is promulgated by the Superintendent pursuant to Title 24-A M.R.S.A. Sections 212, 953 and 2532-A.

### Article II. Scope

 This rule applies to all policies subject to Title 24-A M.R.S.A. Sections 951 to 958-A and Sections 2528 to 2534.

Article III. Procedure for Use of Same Minimum Nonforfeiture Standards for Men and Women Insured Under 1980 CSO and 1980 CET Mortality Tables

### Section 1. Preamble

 The U.S. Supreme Court in its decision in Arizona Governing Committee v. Norris makes it illegal for an employer to make contributions after August 1, 1983 to a defined contribution pension plan if the benefits derived from those contributions differ by sex. Although there is some uncertainty as to the breadth of the Supreme Court's decision, it would seem to require that after August 1, 1983, employer pension plans may need to be funded by life insurance products that have identical nonforfeiture values for men and women. Since the 1980 CSO and 1980 CET Mortality Tables contain mortality rates that vary by both age and sex, it is very difficult if not impossible for companies to determine actual nonforfeiture values that are identical for men and women and also satisfy a sex-differentiated minimum standard. For this reason, this rule permits the same minimum nonforfeiture standards for men and women insureds under the 1980 CSO and 1980 CET Mortality Tables.

 A few background comments may be helpful in understanding the intent of this Article.

(1) No attempt was made to define which policies and situations are covered by the Norris decision and which are not. The breadth of the Norris decision is unclear and may ultimately have to be resolved by further court decisions or Federal Legislation.

(2) Insurers are given flexibility to use either

(a) The existing tables with mortality rates that vary by age and sex, or

(b) Tables of mortality rates which are a blend of the male and female mortality rates.

(3) No change is made in minimum valuation standards, since these do not involve any contractual relationship between the insurer and its policyholder clients and the Supreme Court did not address state statutory valuation standards.

(4) Section 5 is included to make it clear that an insurer who issues the same kind of policy on a sex-distinct basis in some circumstances and on a sex-neutral basis in others shall not be deemed to be in violation of the state unfair discrimination laws.

(5) *(repealed)*

(6) *(repealed)*

### Section 2. Purpose

 The purpose of this Article is to permit individual life insurance policies to provide the same cash values and paid-up nonforfeiture benefits to both men and women. No change in minimum valuation standards is implied by this rule.

### Section 3. Definitions

A. As used in this Article, "1980 CSO Table, with or without Ten-Year Select Mortality Factor" means that mortality table, consisting of separate rates of mortality for male and female lives, developed by the Society of Actuaries Committee to Recommend New Mortality Tables for Valuation of Standard Individual Ordinary Life Insurance, incorporated in the 1980 NAIC Amendments to the Model Standard Valuation Law and Standard Nonforfeiture Law for Life Insurance, and referred to in those models as the Commissioners 1980 Standard Ordinary Mortality Table, with or without Ten-Year Select Mortality Factors.

B. As used in this Article, "1980 CSO Table (M), with or without Ten-Year Select Mortality Factors" means that mortality table consisting of the rates of mortality for male lives from the 1980 CSO Table, with or without Ten-Year Select Mortality Factor.

C. As used in this Article, "1980 CSO Table (F), with or without Ten-Year Select Mortality Factors" means that mortality table consisting of the rates of mortality for female lives from the 1980 CSO Table, with or without Ten-Year Select Mortality Factors.

D. As used in this Article, "1980 CET Table" means that mortality table consisting of separate rates of mortality for male and female lives, developed by the Society of Actuaries Committee to Recommend New Mortality Tables for Valuation of Standard Individual Ordinary Life Insurance, incorporated in the 1980 NAIC Amendments to the Model Standard Valuation Law and Standard Nonforfeiture Law for Life Insurance, and referred to in those models as the Commissioners 1980 Extended Term Insurance Table.

E. As used in this Article, "1980 CET Table (M)” means that mortality table consisting of the rates of mortality for male lives from the 1980 CET Table.

F. As used in this Article, "1980 CET Table (F)” means that mortality table consisting of the rates of mortality for female lives from the 1980 CET Table.

G. As used in this Rule, "1980 CSO and 1980 CET Smoker and Nonsmoker Mortality Tables" mean the mortality tables with separate rates of mortality for smokers and nonsmokers derived from the 1980 CSO and 1980 CET Mortality Tables by the Society of Actuaries Task Force on Smoker/Nonsmoker Mortality and adopted by the NAIC in December 1983.

### Section 4. Rule

 For any policy of insurance on the life of either a male or female insured delivered or issued for delivery in this state after the operative date of Title 24-A M.R.S.A. Section 2532-A for that policy form, (i) a mortality table which is a blend as defined below, of the 1980 CSO Table (M) and the 1980 CSO Table (F) with or without Ten-Year Select Mortality Factors may at the option of the company be substituted for the 1980 CSO Table, with or without Ten-Year Select Mortality Factors, and (ii) a mortality table which is of the same blend as used in (i) but applied to form a blend of the 1980 CET Table (M) and the 1980 CET Table (F) may at the option of the company be substituted for the 1980 CET Table for use in determining minimum cash surrender values and amounts of paid-up nonforfeiture benefits.

 The following blends, as adopted by the National Association of Insurance Commissioners in December, 1983, and later corrected, will be acceptable:

A. 100% Male 0% for tables to be designated as the "1980 CSO-A" and "1980 CET‑A" tables.

B. 80% Male 20% Female for tables to be designated as the "1980 CSO-B" and "1980 CET‑B" tables.

C. 60% Male 40% Female for tables to be designated as the "1980 CSO-C" and "1980 CET‑C" tables.

D. 50% Male 50% Female for tables to be designated as the "1980 CSO-D" and "1980 CET-D" tables.

E. 40% Male 60% Female for tables to be designated as the "1980 CSO-E" and "1980 CET‑E" tables.

F. 20% Male 80% Female for tables to be designated as the "1980 CSO-F" and "1980 CET‑F" tables.

G. 0% Male 100% Female for tables to be designated as the "1980 CSO-G" and "1980 CET-G" tables.

 Tables A and G are not to be used with respect to policies issued on or after January 1, 1985 except where the proportion of persons insured is anticipated to be 90 percent or more of one sex or the other or except for certain policies converted from group insurance. Such group conversions issued on or after January 1, 1986 must use Mortality Tables based on the blend of lives by sex expected for such policies if such group conversions are considered as extensions of the Norris decision. This consideration has not been clearly defined by court or legislative action in all jurisdictions.

### Section 4A. Alternate Rule

 In determining minimum cash surrender values and amounts of paid-up nonforfeiture benefits for any policy of insurance on the life of either a male or female insured on a form of insurance with separate rates for smokers and nonsmokers delivered or issued for delivery in this state after the operative date of Title 24-A M.R.S.A. Section 2532-A for that policy form, in addition to the mortality tables that may be used according to Section 4, (i) a mortality table which is a blend of the male and female rates of mortality according to the 1980 CSO Smoker Mortality Table, in the case of lives classified as smokers, or the 1980 CSO Nonsmoker Mortality Table, in the case of lives classified as nonsmokers, with or without ten-year Select Mortality Factors, may at the option of the company be substituted for the 1980 CSO Table, with or without Ten-Year Select Mortality Factors, and (ii) a mortality table which is of the same blend as used in (i) but applied to form a blend of the male and female rates of mortality according to the corresponding 1980 CET Smoker Mortality Table or 1980 CET Nonsmoker Mortality Table may at the option of the company be substituted for the 1980 CET Table.

The following blended mortality tables will be considered acceptable:

SA: 100% Male 0% Female smoker tables designated as "1980 CSO-SA" and "1980 CET-SA" Tables.

SB: 80% Male 20% Female smoker tables designated as "1980 CSO-SB" and "1980 CET-SB" Tables.

SC: 60% Male 40% Female smoker tables designated as "1980 CSO-SC" and "1980 CET-SC" Tables.

SD: 50% Male 50% Female smoker tables designated as "1980 CSO-SD" and "1980 CET-SD" Tables.

SE: 40% Male 60% Female smoker tables designated as "1980 CSO-SE" and "1980 CET-SE" Tables.

SF: 20% Male 80% Female smoker tables designated as "1980 CSO-SF" and "1980 CET-SF" Tables.

SG: 0% Male 100% Female smoker tables designated as "1980 CSO-SG" and "1980 CET-SG" Tables.

NA: 100% Male 0% Female nonsmoker tables designated as "1980 CSO‑NA" and "1980 CET‑NA" Tables.

NB: 80% Male 20% Female nonsmoker tables designated as "1980 CSO‑NB" and "1980 CET‑NB" Tables.

NC: 60% Male 40% Female nonsmoker tables designated as "1980 CSO‑NC" and "1980 CET‑NC" Tables.

ND: 50% Male 50% Female nonsmoker tables designated as "1980 CSO‑ND" and "1980 CET‑ND" Tables.

NE: 40% Male 60% Female nonsmoker tables designated as "1980 CSO‑NE" and "1980 CET‑NE" Tables.

NF: 20% Male 80% Female nonsmoker tables designated as "1980 CSO‑NF" and "1980 CET‑NF" Tables.

NG: 0% Male 100% Female nonsmoker tables designated as "1980 CSO‑NG" and "1980 CET‑NG" Tables.

 Tables SA, SG, NA and NG are not acceptable as blended tables unless the proportion of persons insured is anticipated to be 90% or more of one sex or the other.

### Section 5. Unfair discrimination

 It shall not be a violation of Title 24-A M.R.S.A. Section 2159, for an insurer to issue the same kind of policy of life insurance on both a sex distinct and sex neutral basis.

**Section 6. Effective date**

The effective date of this Article as amended is January 1, 2015.

**Article IV. Smoker/Nonsmoker Mortality Table**

**Section 1. Purpose**

 The purpose of this Article is to permit the use of mortality tables that reflect differences in mortality between smokers and nonsmokers in determining minimum reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits for plans of insurance with separate premium rates for smokers and nonsmokers.

### Section 2. Definitions

A. As used in this Article, "1980 CSO Table, with or without Ten-Year Select Mortality Factor" means that mortality table, consisting of separate rates of mortality for male and female lives, developed by the Society of Actuaries Committee to Recommend New Mortality Tables for Valuation of Standard Individual Ordinary Life Insurance, incorporated in the 1980 NAIC Amendments to the Model Standard Valuation Law and Standard Nonforfeiture Law for Life Insurance, and referred to in those models as the Commissioners 1980 Standard Ordinary Mortality Table, with or without Ten-Year Select Mortality Factors. The same select factors will be used for both smokers and nonsmokers tables.

B. As used in this Article, "1980 CET Table" means that mortality table consisting of separate rates of mortality for male and female lives, developed by the Society of Actuaries Committee to Recommend New Mortality Tables for Valuation of Standard Individual Ordinary Life Insurance, incorporated in the 1980 NAIC Amendments to the Model Standard Valuation Law and Standard Nonforfeiture Law for Life Insurance, and referred to in those models as the Commissioners 1980 Extended Term Insurance Table.

C. As used in this Article, "1958 CSO Table" means that mortality table developed by the Society of Actuaries Special Committee on New Mortality Tables, incorporated in the NAIC Model Standard Nonforfeiture Law for Life Insurance, and referred to in that model as the Commissioners 1958 Standard Ordinary Mortality Table.

D. As used in this Article, "1958 CET Table" means that mortality table developed by the Society of Actuaries Special Committee on New Mortality Tables, incorporated in the NAIC Model Standard Nonforfeiture Law for Life Insurance, and referred to in that model as the Commissioners 1958 Extended Term Insurance Table.

E. As used in this Article, the phrase "smoker and nonsmoker mortality tables" refers to the mortality tables with separate rates of mortality for smokers and nonsmokers derived from the tables defined in A through D of this section which were developed by the Society of Actuaries Task Force on Smoker/Nonsmoker Mortality and the California Insurance Department staff and adopted by the National Association of Insurance Commissioners in December, 1983.

F. As used in this Article, the phrase "the composite mortality tables" refers to the mortality tables defined in A through D of this section as they were originally published with rates of mortality that do not distinguish between smokers and nonsmokers.

### Section 3. Alternate tables

A. For any policy of insurance delivered or issued for delivery in this state after the operative date of Title 24-A M.R.S.A. Section 2532-A for that policy form and before January 1, 1989, at the option of the company and subject to the conditions stated in Section 4 of this Article, (I) the 1958 CSO Smoker and Nonsmoker Mortality Tables may be substituted for the 1980 CSO Table, with or without Ten-Year Select Mortality Factors, and (ii) the 1958 CET Smoker and Nonsmoker Mortality Tables may be substituted for the 1980 CET Table for use in determining minimum reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits.

Provided that for any category of insurance issued on female lives with minimum reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits determined using the 1958 CSO or 1958 CET Smoker and Nonsmoker Mortality Tables, such minimum values may be calculated according to an age not more than six years younger than the actual age of the insured.

Provided further that the substitution of the 1958 CSO or 1958 CET Smoker and Nonsmoker Mortality Tables is available only if made for each policy of insurance on a policy form delivered or issued for delivery on or after the operative date for that policy form and before a date not later than January 1, 1989.

B. For any policy of insurance delivered or issued for delivery in this state after the operative date of Title 24-A M.R.S.A. Section 2532-A for that policy form, at the option of the company and subject to the conditions stated in Section 4 of this Article,

(i) the 1980 CSO Smoker and Nonsmoker Mortality Tables, with or without Ten-Year Select Mortality Factors, may be substituted for the 1980 CSO Table, with or without Ten-Year Select Mortality Factors, and

(ii) The 1980 CET Smoker and Nonsmoker Mortality Tables may be substituted for the 1980 CET Table. for use in determining reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits.

### Section 4. Conditions

 For each plan of insurance with separate rates for smokers and nonsmokers an insurer may

(1) Use composite mortality tables to determine minimum reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits,

(2) Use smoker and nonsmoker mortality tables to determine the valuation net premiums and additional minimum reserves, if any, required by Title 24-A M.R.S.A. Section 957 and use composite mortality tables to determine the basic minimum reserves, minimum cash surrender values and amounts of paid-up nonforfeiture benefits, or

(3) Use smoker and nonsmoker mortality to determine minimum reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits.

### Section 5. Effective date

The effective date of this Article is June 17, 1984.

### Article V. Annuity Mortality Tables

### Section 1. Purpose

 The purpose of this Article is to recognize and approve the following mortality tables for use in determining the minimum standard of valuation for annuity and pure endowment contracts: the 1983 Table “a,” the 1983 Group Annuity Mortality (1983 GAM) Table, the Annuity 2000 Mortality Table, the 2012 Individual Annuity Reserving (2012) Table, and the 1994 Group Annuity Reserving (1994 GAR) Table.

### Section 2. Definitions

A. As used in this Article "1983 Table `a'" means that mortality table developed by the Society of Actuaries Committee to Recommend a New Mortality Basis for Individual Annuity Valuation and adopted as a recognized mortality table for annuities in June, 1982 by the National Association of Insurance Commissioners.

B. As used in this Article "1983 GAM Table" means that mortality table developed by the Society of Actuaries Committee on Annuities and adopted as a recognized mortality table for annuities in December 1983 by the National Association of Insurance Commissioners.

C. As used in this Article “1994 GAR Table” means that mortality table developed by the Society of Actuaries Group Annuity Valuation Table Task Force and adopted as a recognized mortality table for annuities in December 1996 by the National Association of Insurance Commissioners.

D. As used in this Article “Annuity 2000 Mortality Table” means that mortality table developed by the Society of Actuaries Committee on Life Insurance Research and adopted as a recognized mortality table for annuities in December 1996 by the National Association of Insurance Commissioners.

E. As used in this rule, “Period table” means a table of mortality rates applicable to a given calendar year (the Period).

F. As used in this rule, “Generational mortality table” means a mortality table containing a set of mortality rates that decrease for a given age from one year to the next based on a combination of a Period table and a projection scale containing rates of mortality improvement.

G. As used in this rule “2012 IAR Table” means that Generational mortality table developed by the Society of Actuaries Committee on Life Insurance Research and containing rates, qx2012 +n , derived from a combination of the 2012 IAM Period Table and Projection Scale G2, using the methodology stated in Section 4.

H. As used in this rule, “2012 Individual Annuity Mortality Period Life (2012 IAM Period) Table” means the Period table containing loaded mortality rates for calendar year 2012. This table contains rates, qx2012, developed by the Society of Actuaries Committee on Life Insurance Research and is Shown in Appendices I - II.

I. As used in this rule, “Projection Scale G2 (Scale G2)” is a table of annual rates, G2x, of mortality improvement by age for projecting future mortality rates beyond calendar year 2012. This table was developed by the Society of Actuaries Committee on Life Insurance Research and is shown in Appendices III - IV.

### Section 3. Individual annuity or pure endowment contracts

A. Except as provided in Subsections B and C of this Section, the 1983 Table "a" is recognized and approved as an individual annuity mortality table for valuation and, at the option of the company, may be used for purposes of determining the minimum standard of valuation for any individual annuity or pure endowment contract issued on or after January 1, 1979.

B. Except as provided in Subsection C of this Section, either the 1983 Table "a" or the Annuity 2000 Mortality Table shall be used for determining the minimum standard of valuation for any individual annuity or pure endowment contract issued on or after January 1, 1985.

C. Except as provided in Subsection D and E of this Section, the Annuity 2000 Mortality Table shall be used for determining the minimum standard of valuation for any individual annuity or pure endowment contract issued on or after January 1, 2000.

D. Except as provided in Subsection E of this section, the 2012 IAR Mortality Table shall be used for determining the minimum standard of valuation for any individual annuity or pure endowment contract issued on or after January 1, 2015.

E. The 1983 Table “a” without projection shall be used for determining the minimum standard of valuation for any individual annuity or pure endowment contract issued on or after January 1, 2000, solely when the contract is based on life contingencies and is issued to fund periodic benefits arising from:

(1) Settlements of various forms of claims pertaining to court settlements or out of court settlements from tort actions;

(2) Settlements involving similar actions such as worker’s compensation claims; or

(3) Settlements of long term disability claims where a temporary or life annuity has been used in lieu of continuing disability payments.

**Section 4. Application of the 2012 IAR Mortality Table**

In using the 2012 IAR Mortality Table, the mortality rate for a person age x in year (2012 + n) is calculated as follows:

 qx 2012+n =qx2012(1-G2x)n

### The resulting qx2012+n shall be round to three decimal places per 1,000, e.g., 0.741 deaths per 1,000. Also, the rounding shall occur according to the formula above, starting at the 2012 period table rate.

For example, for a male age 30, qx2012=0.741

qx2013=0.741\*(1 - 0.010) ^ 1 = 0.73359, which is rounded to 0.734.

qx2014=0.741\*(1 - 0.010) ^ 2 = 0.7262541, which is rounded to 0.726.

A method leading to incorrect rounding would be to calculate qx2014 as qx2013\*(1 - 0.010), or 0.734\*0.99=0.727.

It is incorrect to use the already rounded qx2013 to calculate qx2014.

### Section 5. Group annuity or pure endowment contracts

A. Except as provided in Subsections B and C of this Section, the 1983 GAM Table, the 1983 Table "a" and the 1994 GAR Table are recognized and approved as group annuity mortality tables for valuation and, at the option of the company, any one of these tables may be used for purposes of valuation for any annuity or pure endowment purchased on or after January 1, 1979 under a group annuity or pure endowment contract.

B. Except as provided in Subsection C of this Section, either the 1983 GAM Table or the 1994 GAR Table shall be used for determining the minimum standard of valuation for any annuity or pure endowment purchased on or after January 1, 1986 under a group annuity or pure endowment contract.

C. The 1994 GAR Table shall be used for determining the minimum standard of valuation for any annuity or pure endowment purchased on or after January 1, 2000 under a group annuity or pure endowment contract.

**Section 6. Application of the 1994 GAR Table**

In using the 1994 GAR Table, the mortality rate for a person age x in year (1994 + n) is calculated as follows:

 *q*x 1994+n = *q*x1994 (1 - *AA*x ) n

where the *q*x1994 and *AA*xs are as specified in the 1994 GAR Table.

### Section 7. Effective date

The effective date of this Article as amended is January 1, 2015.

**Article VI. Recognition of the 2001 CSO Mortality Table for Use in Determining Minimum Reserve Liabilities and Nonforfeiture Benefits**

**Section 1. Purpose**

The purpose of this Article is to recognize, permit, and prescribe the use of the 2001 Commissioners Standard Ordinary (CSO) Mortality Table for use in determining minimum reserve liabilities and nonforfeiture benefits.

**Section 2. Definitions**

A. “2001 CSO Mortality Table” means that mortality table, consisting of separate rates of mortality for male and female lives, developed by the American Academy of Actuaries CSO Task Force from the Valuation Basic Mortality Table developed by the Society of Actuaries Individual Life Insurance Valuation Mortality Task Force, and adopted by the NAIC in December 2002. The 2001 CSO Mortality Table is included in the Proceedings of the NAIC (2nd Quarter 2002). Unless the context indicates otherwise, the “2001 CSO Mortality Table” includes both the ultimate form of that table and the select and ultimate form of that table and includes both the smoker and nonsmoker mortality tables and the composite mortality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality tables.

B. “2001 CSO Mortality Table (F)” means that mortality table consisting of the rates of mortality for female lives from the 2001 CSO Mortality Table.

C. “2001 CSO Mortality Table (M)” means that mortality table consisting of the rates of mortality for male lives from the 2001 CSO Mortality Table.

D. “Composite mortality tables” means mortality tables with rates of mortality that do not distinguish between smokers and nonsmokers.

E. “Smoker and nonsmoker mortality tables” means mortality tables with separate rates of mortality for smokers and nonsmokers.

**Section 3. 2001 CSO Mortality Table**

A. At the election of the company for any one or more specified plans of insurance and subject to the conditions stated in this rule, the 2001 CSO Mortality Table may be used as the minimum standard for policies issued on or after January 1, 2004, and before the date specified in Subsection B to which 24-A M.R.S.A. Section 953(2)(A), 24-A M.R.S.A. Section 2532-A(8)(F), and Rule 830, Sections 5(A) and 5(B) are applicable. If the company elects to use the 2001 CSO Mortality Table, it shall do so for both valuation and nonforfeiture purposes.

B. Subject to the conditions stated in this rule, the 2001 CSO Mortality Table shall be used in determining minimum standards for policies issued on and after January 1, 2009, to which 24-A M.R.S.A. Section 953(2)(A), 24-A M.R.S.A. Section 2532-A(8)(F), and Rule 830, Sections 5(A) and 5(B) are applicable.

**Section 4. Conditions**

A. For each plan of insurance with separate rates for smokers and nonsmokers an insurer may use:

(1) Composite mortality tables to determine minimum reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits;

(2) Smoker and nonsmoker mortality tables to determine the valuation net premiums and additional minimum reserves, if any, required by 24-A M.R.S.A. Section 957 and use composite mortality tables to determine the basic minimum reserves, minimum cash surrender values, and amounts of paid-up nonforfeiture benefits; or

(3) Smoker and nonsmoker mortality to determine minimum reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits.

B. For plans of insurance without separate rates for smokers and nonsmokers the composite mortality tables shall be used.

C. For the purpose of determining minimum reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits, the 2001 CSO Mortality Table may, at the option of the company for each plan of insurance, be used in its ultimate or select and ultimate form, subject to the restrictions of Section 5 and Rule 830 relative to use of the select and ultimate form.

D. When the 2001 CSO Mortality Table is the minimum reserve standard for any plan for a company, the actuarial opinion in the annual statement filed with the superintendent shall be based on an asset adequacy analysis as specified in Rule 780, Section 6.

**Section 5. Applicability of the 2001 CSO Mortality Table to Rule 830**

A. The 2001 CSO Mortality Table may be used in applying Rule 830 in the following manner, subject to the transition dates for use of the 2001 CSO Mortality Table in Section 3 of this Article. Unless otherwise noted, the references in this section are to Rule 830.

(1) Section 3(A)(2)(b): The net level reserve premium is based on the ultimate mortality rates in the 2001 CSO Mortality Table.

(2) Section 4(B): All calculations are made using the 2001 CSO Mortality Rate, and, if elected, the optional minimum mortality standard for deficiency reserves stipulated in Section 5(A)(4) of this Article. The value of “qx+k+t-1” is the valuation mortality rate for deficiency reserves in policy year k+t, but using the unmodified select mortality rates if modified select mortality rates are used in the computation of deficiency reserves.

(3) Section 5(A): The 2001 CSO Mortality Table is the minimum standard for basic reserves.

(4) Section 5(B): The 2001 CSO Mortality Table is the minimum standard for deficiency reserves. If select mortality rates are used, they may be multiplied by X percent for durations in the first segment, subject to the conditions specified in Sections (5)(B)(3)(a) to (i). In demonstrating compliance with those conditions, the demonstrations may not combine the results of tests that utilize the 1980 CSO Mortality Table with those tests that utilize the 2001 CSO Mortality Table, unless the combination is explicitly required by rule or necessary to be in compliance with relevant Actuarial Standards of Practice.

(5) Section 6(C): The valuation mortality table used in determining the tabular cost of insurance shall be the ultimate mortality rates in the 2001 CSO Mortality Table.

(6) Section 6(E)(4): The calculations specified in Section 6(E) shall use the ultimate mortality rates in the 2001 CSO Mortality Table.

 (7) Section 6(F)(4): The calculations specified in Section 6(F) shall use the ultimate mortality rates in the 2001 CSO Mortality Table.

(8) Section 6(G)(2): The calculations specified in Section 6(G) shall use the ultimate mortality rates in the 2001 CSO Mortality Table.

(9) Section 7(A)(1)(b): The one-year valuation premium shall be calculated using the ultimate mortality rates in the 2001 CSO Mortality Table.

B. Nothing in this section shall be construed to expand the applicability of Rule 830 to include life insurance policies exempted under Section 3(A) of that rule.

**Section 6. Gender-Blended Tables**

A. For any ordinary life insurance policy delivered or issued for delivery in this state on or after January 1, 2004 that utilizes the same premium rates and charges for male and female lives or is issued in circumstances where applicable law does not permit distinctions on the basis of gender, a mortality table that is a blend of the 2001 CSO Mortality Table (M) and the 2001 CSO Mortality Table (F) may, at the option of the company for each plan of insurance, be substituted for the 2001 CSO Mortality Table for use in determining minimum cash surrender values and amounts of paid-up nonforfeiture benefits. No change in minimum valuation standards is implied by this subsection.

B. The company may choose from among the blended tables developed by the American Academy of Actuaries CSO Task Force and adopted by the NAIC in December 2002.

C. It shall not, in and of itself, be a violation of 24-A M.R.S.A. Chapter 23 for an insurer to issue the same kind of policy of life insurance on both a sex-distinct and sex-neutral basis.

**Section 7. Effective Date**

The effective date of this Article is March 27, 2004.

### Article VII. Recognition of Preferred Mortality Tables for Use in Determining Minimum Reserve Liabilities

### Section 1. Purpose

### The purpose of this Article is to recognize and permit the use of mortality tables that reflect differences in mortality between Preferred and Standard lives in determining minimum reserve liabilities for life insurance.

### Section 2. Definitions

### A. “2001 CSO Mortality Table” means that mortality table, consisting of separate rates of mortality for male and female lives, developed by the American Academy of Actuaries CSO Task Force from the Valuation Basic Mortality Table developed by the Society of Actuaries Individual Life Insurance Valuation Mortality Task Force and adopted by the NAIC in December 2002. The 2001 CSO Mortality Table is included in the Proceedings of the NAIC (2nd Quarter 2002) and is supplemented by the 2001 CSO Preferred Class Structure Mortality Table defined below in Subsection B. Unless the context indicates otherwise, the “2001 CSO Mortality Table” includes both the ultimate form of that table and the select and ultimate form of that table and includes both the smoker and nonsmoker mortality tables and the composite mortality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality tables. Mortality tables in the 2001 CSO Mortality Table include the following:

### (1) “2001 CSO Mortality Table (F)” means that mortality table consisting of the rates of mortality for female lives from the 2001 CSO Mortality Table.

### (2) “2001 CSO Mortality Table (M)” means that mortality table consisting of the rates of mortality for male lives from the 2001 CSO Mortality Table.

### (3) “Composite mortality tables” means mortality tables with rates of mortality that do not distinguish between smokers and nonsmokers.

### (4) “Smoker and nonsmoker mortality tables” means mortality tables with separate rates of mortality for smokers and nonsmokers.

### B. “2001 CSO Preferred Class Structure Mortality Table” means mortality tables with separate rates of mortality for Super Preferred Nonsmokers, Preferred Nonsmokers, Residual Standard Nonsmokers, Preferred Smokers, and Residual Standard Smoker splits of the 2001 CSO Nonsmoker and Smoker tables as adopted by the NAIC at the September 2006 national meeting and published in the NAIC Proceedings (3rd Quarter 2006). Unless the context indicates otherwise, the “2001 CSO Preferred Class Structure Mortality Table” includes both the ultimate form of that table and the select and ultimate form of that table. It includes both the smoker and nonsmoker mortality tables. It includes both the male and female mortality tables and the gender composite mortality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality table.

### C. “Statistical agent” means an entity with proven systems for protecting the confidentiality of individual insured and insurer information; demonstrated resources for and history of ongoing electronic communications and data transfer ensuring data integrity with insurers, which are its members or subscribers; and a history of and means for aggregation of data and accurate promulgation of the experience modifications in a timely manner.

### Section 3. 2001 CSO Preferred Class Structure Table

###  At the election of the company, for each calendar year of issue, for any one or more specified plans of insurance and subject to satisfying the conditions stated in this Article, the 2001 CSO Preferred Class Structure Mortality Table may be substituted in place of the 2001 CSO Smoker or Nonsmoker Mortality Table as the minimum valuation standard for policies issued on or after January 1, 2007. For policies issued on or after March 27, 2004 and prior to January 1, 2007, these tables may be substituted, with the consent of the Superintendent and subject to the conditions of Section 4. In determining such consent, the Superintendent may rely on the consent of the insurance commissioner of the company’s state of domicile. No such election shall be made until the company demonstrates at least 20% of the business to be valued on this table is in one or more of the preferred classes. A table from the 2001 CSO Preferred Class Structure Mortality Table used in place of a 2001 CSO Mortality Table, pursuant to the requirements of this rule, will be treated as part of the 2001 CSO Mortality Table only for purposes of reserve valuation pursuant to the requirements of Article VI of this rule.

### Section 4. Conditions

### A. For each plan of insurance with separate rates for Preferred and Standard Nonsmoker lives, an insurer may use the Super Preferred Nonsmoker, Preferred Nonsmoker, and Residual Standard Nonsmoker tables to substitute for the Nonsmoker mortality table found in the 2001 CSO Mortality Table to determine minimum reserves. At the time of election and annually thereafter, except for business valued under the Residual Standard Nonsmoker Table, the appointed actuary shall certify that:

### (1) The present value of death benefits over the next ten years after the valuation date, using the anticipated mortality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value of death benefits using the valuation basic table corresponding to the valuation table being used for that class.

### (2) The present value of death benefits over the future life of the contracts, using anticipated mortality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value of death benefits using the valuation basic table corresponding to the valuation table being used for that class.

### B. For each plan of insurance with separate rates for Preferred and Standard Smoker lives, an insurer may use the Preferred Smoker and Residual Standard Smoker tables to substitute for the Smoker mortality table found in the 2001 CSO Mortality Table to determine minimum reserves. At the time of election and annually thereafter, for business valued under the Preferred Smoker Table, the appointed actuary shall certify that:

### (1) The present value of death benefits over the next ten years after the valuation date, using the anticipated mortality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value of death benefits using the Preferred Smoker valuation basis table corresponding to the valuation table being used for that class.

### (2) The present value of death benefits over the future life of the contracts, using anticipated mortality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value of death benefits using the Preferred Smoker valuation basic table.

### C. Unless exempted by the Superintendent, every authorized insurer using the 2001 CSO Preferred Class Structure Table shall annually file with the Superintendent, with the NAIC, or with a statistical agent designated by the NAIC and acceptable to the Superintendent, statistical reports showing mortality and such other information as the Superintendent may deem necessary or expedient for the administration of the provisions of this Article. Unless the Superintendent establishes a different form, the reports shall be in a form established by the NAIC or by a statistical agent designated by the NAIC and acceptable to the Superintendent.

D. The use of the 2001 CSO Preferred Class Structure Table for the valuation of policies issued prior to January 1, 2007 shall not be permitted in any statutory financial statement in which a company reports, with respect to any policy or portion of a policy coinsured, either of the following:

(1) In cases where the mode of payment of the reinsurance premium is less frequent than the mode of payment of the policy premium, a reserve credit that exceeds, by more than the amount specified in this paragraph as Y, the gross reserve calculated before reinsurance. Y is the amount of the gross reinsurance premium that (a) provides coverage for the period from the next policy premium due date to the earlier of the end of the policy year and the next reinsurance premium due date, and (b) would be refunded to the ceding entity upon the termination of the policy.

(2) In cases where the mode of payment of the reinsurance premium is more frequent than the mode of payment of the policy premium, a reserve credit that is less than the gross reserve, calculated before reinsurance, by an amount that is less than the amount specified in this paragraph as Z. Z is the amount of the gross reinsurance premium that the ceding entity would need to pay the assuming company to provide reinsurance coverage from the period of the next reinsurance premium due date to the next policy premium due date minus any liability established for the proportionate amount not remitted to the reinsurer.

For purposes of this condition, both the reserve credit and the gross reserve before reinsurance (i) for the mean reserve method shall be defined as the mean reserve minus the deferred premium asset, and (ii) for the mid-terminal reserve method shall include the unearned premium reserve. A company may estimate and adjust its accounting on an aggregate basis in order to meet the conditions to use the 2001 CSO Preferred Class Structure Table.

### Section 5. Effective Date

 The effective date of this Article as amended is January 1, 2015.

### Article VIII. Determining Reserve Liabilities for Credit Life Insurance

### Section 1. Purpose

###  The purpose of this Article is to:

### A. Recognize the 2001 CSO Male Composite Ultimate Mortality Table for use in determining the minimum standard of valuation for credit life insurance.

### B. Specify the interest rate and method to be used in determining the minimum standard of valuation for credit life insurance.

### Section 2. Definitions

### A. “2001 CSO Mortality Table” means that mortality table, consisting of separate rates of mortality for male and female lives, developed by the American Academy of Actuaries CSO Task Force from the Valuation Basic Mortality Table developed by the Society of Actuaries Individual Life Insurance Valuation Mortality Task Force, and adopted by the NAIC in December 2002. The 2001 CSO Mortality Table is included in the Proceedings of the NAIC (2nd Quarter 2002). Unless the context indicates otherwise, the “2001 CSO Mortality Table” includes both the ultimate form of that table and the select and ultimate form of that table and includes both the smoker and nonsmoker mortality tables and the composite mortality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality tables.

### B. “Composite mortality tables” means mortality tables with rates of mortality that do not distinguish between smokers and nonsmokers.

### C. “Credit life insurance” means life insurance policies and certificates subject to 24‑A M.R.S.A. Chapter 37.

### Section 3. 2001 CSO Male Composite Ultimate Mortality Table

### A. The minimum standard for both male and female insureds shall be 2001 CSO Male Composite Ultimate Mortality Table.

### B. Where the credit life insurance policy or certificate insures two lives, the minimum standard shall be twice the mortality in the 2001 CSO Male Composite Ultimate Mortality Table based on the age of the older insured.

### Section 4. Minimum Standards

### A. Rule 830 shall not apply to credit life insurance.

### B. The interest rates used in determining the minimum standard for valuation shall be the calendar year statutory valuation interest rates as defined in 24-A M.R.S.A. § 953-A.

### C. The method used in determining the minimum standard for valuation shall be the commissioners reserve valuation method as defined in 24-A M.R.S.A. § 954.

### (1) In applying the commissioners reserve valuation method, consideration should be given to the period of time for which renewability of benefits are guaranteed under the contract. If benefits are guaranteed for less than one year, the method produces a reserve equal to the mortality cost from the valuation date to the premium “paid-to” date.

### 2) Title 24-A M.R.S.A. § 952 contains language permitting the use of “group methods and approximate averages for fractions of a year or otherwise.” Such methods may be appropriate in those situations where individual certificate data is not readily available to the insurer. This is especially common in monthly payment programs, with frequent remittance of small premiums.

### Section 5. Effective Date

### This Article is applicable to credit life insurance policies and certificates issued on or after January 1, 2007.

Article IX. Preneed Life Insurance Minimum Standards for Determining Reserve Liabilities and Nonforfeiture Values

**Section 1. Scope**

This Article applies to preneed insurance contracts, as defined in Section 3(C) of this Article, and to similar policies and certificates.

**Section 2. Purpose**

The purpose of this Article is to establish for preneed insurance products minimum mortality standards for reserves and nonforfeiture values, and to require the use of the 1980 Commissioners Standard Ordinary (CSO) Life Valuation Mortality Table for use in determining the minimum standard of valuation of reserves and the minimum standard nonforfeiture values for preneed insurance products.

**Section 3. Definitions**

A. “2001 CSO” means that mortality table, consisting of separate rates of mortality for male and female lives, developed by the American Academy of Actuaries CSO Task Force from the Valuation Basic Mortality Table developed by the Society of Actuaries Individual Life Insurance Valuation Mortality Task Force, and adopted by the NAIC in December 2002. The 2001 CSO Mortality Table is included in the Proceedings of the NAIC (2nd Quarter 2002). Unless the context indicates otherwise, the “2001 CSO Mortality Table” includes both the ultimate form of that table and the select and ultimate form of that table and includes both the smoker and nonsmoker mortality tables and the composite mortality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality tables.

B. “Ultimate 1980 CSO” means the Commissioners’ 1980 Standard Ordinary Life Valuation Mortality Tables (1980 CSO) without ten-year (10-year) selection factors, incorporated into the 1980 amendments to the NAIC Standard Valuation Law approved in December 1983. It also includes gender-blended tables consistent with Article III of this rule.

C. For the purposes of this Article, “preneed insurance” means any life insurance policy or certificate that is issued in combination with, in support of, with an assignment to, or as a guarantee for a prearrangement agreement for goods and services to be provided at the time of and immediately following the death of the insured. Goods and services may include, but are not limited to embalming, cremation, body preparation, viewing or visitation, coffin or urn, memorial stone, and transportation of the deceased. The status of the policy or contract as preneed insurance is determined at the time of issue in accordance with the policy form filing.

# Section 4. Minimum Valuation Mortality Standards

# For preneed insurance contracts, as defined in Section 3(C) of this Article, and similar policies and contracts, the minimum mortality standard for determining reserve liabilities and non-forfeiture values for both male and female insureds shall be the Ultimate 1980 CSO.

**Section 5. Minimum Valuation Interest Rate Standards**

A. The interest rates used in determining the minimum standard for valuation of preneed insurance shall be the calendar year statutory valuation interest rates as defined in 24-A M.R.S.A. §953-A.

## B. The interest rates used in determining the minimum standard for nonforfeiture values for preneed insurance shall be the calendar year statutory nonforfeiture interest rates as defined in 24-A M.R.S.A. §2532-A.

**Section 6. Minimum Valuation Method Standards**

## A. The method used in determining the standard for the minimum valuation of reserves of preneed insurance shall be the method defined in 24-A M.R.S.A. §954.

## B. The method used in determining the standard for the minimum nonforfeiture values for preneed insurance shall be the method defined in 24-A M.R.S.A. §2532-A.

**Section 7. Transition Rules**

A. For preneed insurance policies issued on or after the effective date of this Article and before January 1, 2012, the 2001 CSO may be used as the minimum standard for reserves and minimum standard for non-forfeiture benefits for both male and female insureds.

B. If an insurer elects to use the 2001 CSO as a minimum standard for any policy issued on or after the effective date of this Article and before January 1, 2012, the insurer shall provide, as a part of the actuarial opinion memorandum submitted in support of the company’s asset adequacy testing, an annual written notification to the domiciliary commissioner. The notification shall include:

(1) A complete list of all preneed insurance policy forms that use the 2001 CSO as a minimum standard;

(2) A certification signed by the appointed actuary stating that the reserve methodology employed by the company in determining reserves for the preneed insurance policies issued after the effective date and using the 2001 CSO as a minimum standard, develops adequate reserves (For the purposes of this certification, the preneed insurance policies using the 2001 CSO as a minimum standard cannot be aggregated with any other policies.); and

(3) Supporting information regarding the adequacy of reserves for preneed insurance policies issued after the effective date of this Article and using the 2001 CSO as a minimum standard for reserves.

C. Preneed insurance policies issued on or after January 1, 2012, must use the Ultimate 1980 CSO in the calculation of minimum nonforfeiture values and minimum reserves.

**Section 8. Effective Date**

This Article is applicable to preneed insurance policies and certificates and similar contracts and certificates, as specified in Section 1 of this Article, issued on or after January 1, 2009.

Article X. Separability

 If any provision of this Rule or the application thereof to any person or circumstance is for any reason held to be invalid, the remainder of the Rule and the application of such provision to other persons or circumstances shall not be affected thereby.

STATUTORY AUTHORITY: 24 M.R.S.A. §2325-A; 24-A M.R.S.A. §§ 212, 2843, 4234-A.

EFFECTIVE DATE:

 June 1, 1984

AMENDED:

 July 15, 1993

 July 9, 1996

EFFECTIVE DATE (ELECTRONIC CONVERSION):

 January 14, 1997

AMENDED:

 December 1, 1997

 August 20, 2001

 March 1, 2004 - filing 2004-64

 December 27, 2014 – filing 2014-292

### Appendix I: 2012 IAM Period Table – Female, Age Nearest Birthday

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **APPENDIX I** |  |  |
|  |  | **2012 IAM Period Table** |  |  |
|  |  | **Female, Age Nearest Birthday** |  |  |
| **AGE** | **1000\*qx2012** | **AGE** | **1000\*qx2012** | **AGE** | **1000\*qx2012** | **AGE** | **1000\*qx2012** |
| 0 | 1.621 | 30 | 0.300 | 60 | 3.460 | 90 | 88.377 |
| 1 | 0.405 | 31 | 0.321 | 61 | 3.916 | 91 | 97.491 |
| 2 | 0.259 | 32 | 0.338 | 62 | 4.409 | 92 | 107.269 |
| 3 | 0.179 | 33 | 0.351 | 63 | 4.933 | 93 | 118.201 |
| 4 | 0.137 | 34 | 0.365 | 64 | 5.507 | 94 | 130.969 |
| 5 | 0.125 | 35 | 0.381 | 65 | 6.146 | 95 | 146.449 |
| 6 | 0.117 | 36 | 0.402 | 66 | 6.551 | 96 | 163.908 |
| 7 | 0.110 | 37 | 0.429 | 67 | 7.039 | 97 | 179.695 |
| 8 | 0.095 | 38 | 0.463 | 68 | 7.628 | 98 | 196.151 |
| 9 | 0.088 | 39 | 0.504 | 69 | 8.311 | 99 | 213.150 |
| 10 | 0.085 | 40 | 0.552 | 70 | 9.074 | 100 | 230.722 |
| 11 | 0.086 | 41 | 0.600 | 71 | 9.910 | 101 | 251.505 |
| 12 | 0.094 | 42 | 0.650 | 72 | 10.827 | 102 | 273.007 |
| 13 | 0.108 | 43 | 0.697 | 73 | 11.839 | 103 | 295.086 |
| 14 | 0.131 | 44 | 0.740 | 74 | 12.974 | 104 | 317.591 |
| 15 | 0.156 | 45 | 0.780 | 75 | 14.282 | 105 | 340.362 |
| 16 | 0.179 | 46 | 0.825 | 76 | 15.799 | 106 | 362.371 |
| 17 | 0.198 | 47 | 0.885 | 77 | 17.550 | 107 | 384.113 |
| 18 | 0.211 | 48 | 0.964 | 78 | 19.582 | 108 | 400.000 |
| 19 | 0.221 | 49 | 1.051 | 79 | 21.970 | 109 | 400.000 |
| 20 | 0.228 | 50 | 1.161 | 80 | 24.821 | 110 | 400.000 |
| 21 | 0.234 | 51 | 1.308 | 81 | 28.351 | 111 | 400.000 |
| 22 | 0.240 | 52 | 1.460 | 82 | 32.509 | 112 | 400.000 |
| 23 | 0.245 | 53 | 1.613 | 83 | 37.329 | 113 | 400.000 |
| 24 | 0.247 | 54 | 1.774 | 84 | 42.830 | 114 | 400.000 |
| 25 | 0.250 | 55 | 1.950 | 85 | 48.997 | 115 | 400.000 |
| 26 | 0.256 | 56 | 2.154 | 86 | 55.774 | 116 | 400.000 |
| 27 | 0.261 | 57 | 2.399 | 87 | 63.140 | 117 | 400.000 |
| 28 | 0.270 | 58 | 2.700 | 88 | 71.066 | 118 | 400.000 |
| 29 | 0.281 | 59 | 3.054 | 89 | 79.502 | 119 | 400.000 |
|  |  |  |  |  |  | 120 | 1000.000 |
|  |  |  |  |  |  |  |  |

### Appendix II 2012 IAM Period Table – Male, Age Nearest Birthday

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **APPENDIX II** |  |  |
|  |  | **2012 IAM Period Table** |  |  |
|  |  | **Male, Age Nearest Birthday** |  |  |
| **AGE** | **1000\*qx2012** | **AGE** | **1000\*qx2012** | **AGE** | **1000\*qx2012** | **AGE** | **1000\*qx2012** |
| 0 | 1.605 | 30 | 0.741 | 60 | 5.096 | 90 | 109.993 |
| 1 | 0.401 | 31 | 0.751 | 61 | 5.614 | 91 | 123.119 |
| 2 | 0.275 | 32 | 0.754 | 62 | 6.169 | 92 | 137.168 |
| 3 | 0.229 | 33 | 0.756 | 63 | 6.759 | 93 | 152.171 |
| 4 | 0.174 | 34 | 0.756 | 64 | 7.398 | 94 | 168.194 |
| 5 | 0.168 | 35 | 0.756 | 65 | 8.106 | 95 | 185.260 |
| 6 | 0.165 | 36 | 0.756 | 66 | 8.548 | 96 | 197.322 |
| 7 | 0.159 | 37 | 0.756 | 67 | 9.076 | 97 | 214.751 |
| 8 | 0.143 | 38 | 0.756 | 68 | 9.708 | 98 | 232.507 |
| 9 | 0.129 | 39 | 0.800 | 69 | 10.463 | 99 | 250.397 |
| 10 | 0.113 | 40 | 0.859 | 70 | 11.357 | 100 | 268.607 |
| 11 | 0.111 | 41 | 0.926 | 71 | 12.418 | 101 | 290.016 |
| 12 | 0.132 | 42 | 0.999 | 72 | 13.675 | 102 | 311.849 |
| 13 | 0.169 | 43 | 1.069 | 73 | 15.150 | 103 | 333.962 |
| 14 | 0.213 | 44 | 1.142 | 74 | 16.860 | 104 | 356.207 |
| 15 | 0.254 | 45 | 1.219 | 75 | 18.815 | 105 | 380.000 |
| 16 | 0.293 | 46 | 1.318 | 76 | 21.031 | 106 | 400.000 |
| 17 | 0.328 | 47 | 1.454 | 77 | 23.540 | 107 | 400.000 |
| 18 | 0.359 | 48 | 1.627 | 78 | 26.375 | 108 | 400.000 |
| 19 | 0.387 | 49 | 1.829 | 79 | 29.572 | 109 | 400.000 |
| 20 | 0.414 | 50 | 2.057 | 80 | 33.234 | 110 | 400.000 |
| 21 | 0.443 | 51 | 2.302 | 81 | 37.533 | 111 | 400.000 |
| 22 | 0.473 | 52 | 2.545 | 82 | 42.261 | 112 | 400.000 |
| 23 | 0.513 | 53 | 2.779 | 83 | 47.441 | 113 | 400.000 |
| 24 | 0.554 | 54 | 3.011 | 84 | 53.233 | 114 | 400.000 |
| 25 | 0.602 | 55 | 3.254 | 85 | 59.855 | 115 | 400.000 |
| 26 | 0.655 | 56 | 3.529 | 86 | 67.514 | 116 | 400.000 |
| 27 | 0.688 | 57 | 3.845 | 87 | 76.340 | 117 | 400.000 |
| 28 | 0.710 | 58 | 4.213 | 88 | 86.388 | 118 | 400.000 |
| 29 | 0.727 | 59 | 4.631 | 89 | 97.634 | 119 | 400.000 |
|  |  |  |  |  |  | 120 | 1000.000 |

### Appendix III Projection Scale G2 – Female, Age Nearest Birthday

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **APPENDIX III** |  |  |
|  |  | **Projection Scale G2** |  |  |
|  |  | **Female, Age Nearest Birthday** |  |  |
| **AGE** | **G2x** | **AGE** | **G2x** | **AGE** | **G2x** | **AGE** | **G2x** |
| 0 | 0.010 | 30 | 0.010 | 60 | 0.013 | 90 | 0.006 |
| 1 | 0.010 | 31 | 0.010 | 61 | 0.013 | 91 | 0.006 |
| 2 | 0.010 | 32 | 0.010 | 62 | 0.013 | 92 | 0.005 |
| 3 | 0.010 | 33 | 0.010 | 63 | 0.013 | 93 | 0.005 |
| 4 | 0.010 | 34 | 0.010 | 64 | 0.013 | 94 | 0.004 |
| 5 | 0.010 | 35 | 0.010 | 65 | 0.013 | 95 | 0.004 |
| 6 | 0.010 | 36 | 0.010 | 66 | 0.013 | 96 | 0.004 |
| 7 | 0.010 | 37 | 0.010 | 67 | 0.013 | 97 | 0.003 |
| 8 | 0.010 | 38 | 0.010 | 68 | 0.013 | 98 | 0.003 |
| 9 | 0.010 | 39 | 0.010 | 69 | 0.013 | 99 | 0.002 |
| 10 | 0.010 | 40 | 0.010 | 70 | 0.013 | 100 | 0.002 |
| 11 | 0.010 | 41 | 0.010 | 71 | 0.013 | 101 | 0.002 |
| 12 | 0.010 | 42 | 0.010 | 72 | 0.013 | 102 | 0.001 |
| 13 | 0.010 | 43 | 0.010 | 73 | 0.013 | 103 | 0.001 |
| 14 | 0.010 | 44 | 0.010 | 74 | 0.013 | 104 | 0.000 |
| 15 | 0.010 | 45 | 0.010 | 75 | 0.013 | 105 | 0.000 |
| 16 | 0.010 | 46 | 0.010 | 76 | 0.013 | 106 | 0.000 |
| 17 | 0.010 | 47 | 0.010 | 77 | 0.013 | 107 | 0.000 |
| 18 | 0.010 | 48 | 0.010 | 78 | 0.013 | 108 | 0.000 |
| 19 | 0.010 | 49 | 0.010 | 79 | 0.013 | 109 | 0.000 |
| 20 | 0.010 | 50 | 0.010 | 80 | 0.013 | 110 | 0.000 |
| 21 | 0.010 | 51 | 0.010 | 81 | 0.012 | 111 | 0.000 |
| 22 | 0.010 | 52 | 0.011 | 82 | 0.012 | 112 | 0.000 |
| 23 | 0.010 | 53 | 0.011 | 83 | 0.011 | 113 | 0.000 |
| 24 | 0.010 | 54 | 0.011 | 84 | 0.010 | 114 | 0.000 |
| 25 | 0.010 | 55 | 0.012 | 85 | 0.010 | 115 | 0.000 |
| 26 | 0.010 | 56 | 0.012 | 86 | 0.009 | 116 | 0.000 |
| 27 | 0.010 | 57 | 0.012 | 87 | 0.008 | 117 | 0.000 |
| 28 | 0.010 | 58 | 0.012 | 88 | 0.007 | 118 | 0.000 |
| 29 | 0.010 | 59 | 0.013 | 89 | 0.007 | 119 | 0.000 |
|  |  |  |  |  |  | 120 | 0.000 |

### Appendix IV Projection Scale G2 – Male, Age Nearest Birthday

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **APPENDIX IV** |  |  |
|  |  | **Projection Scale G2** |  |  |
|  |  | **Male, Age Nearest Birthday** |  |  |
| **AGE** | **G2x** | **AGE** | **G2x** | **AGE** | **G2x** | **AGE** | **G2x** |
| 0 | 0.010 | 30 | 0.010 | 60 | 0.015 | 90 | 0.007 |
| 1 | 0.010 | 31 | 0.010 | 61 | 0.015 | 91 | 0.007 |
| 2 | 0.010 | 32 | 0.010 | 62 | 0.015 | 92 | 0.006 |
| 3 | 0.010 | 33 | 0.010 | 63 | 0.015 | 93 | 0.005 |
| 4 | 0.010 | 34 | 0.010 | 64 | 0.015 | 94 | 0.005 |
| 5 | 0.010 | 35 | 0.010 | 65 | 0.015 | 95 | 0.004 |
| 6 | 0.010 | 36 | 0.010 | 66 | 0.015 | 96 | 0.004 |
| 7 | 0.010 | 37 | 0.010 | 67 | 0.015 | 97 | 0.003 |
| 8 | 0.010 | 38 | 0.010 | 68 | 0.015 | 98 | 0.003 |
| 9 | 0.010 | 39 | 0.010 | 69 | 0.015 | 99 | 0.002 |
| 10 | 0.010 | 40 | 0.010 | 70 | 0.015 | 100 | 0.002 |
| 11 | 0.010 | 41 | 0.010 | 71 | 0.015 | 101 | 0.002 |
| 12 | 0.010 | 42 | 0.010 | 72 | 0.015 | 102 | 0.001 |
| 13 | 0.010 | 43 | 0.010 | 73 | 0.015 | 103 | 0.001 |
| 14 | 0.010 | 44 | 0.010 | 74 | 0.015 | 104 | 0.000 |
| 15 | 0.010 | 45 | 0.010 | 75 | 0.015 | 105 | 0.000 |
| 16 | 0.010 | 46 | 0.010 | 76 | 0.015 | 106 | 0.000 |
| 17 | 0.010 | 47 | 0.010 | 77 | 0.015 | 107 | 0.000 |
| 18 | 0.010 | 48 | 0.010 | 78 | 0.015 | 108 | 0.000 |
| 19 | 0.010 | 49 | 0.010 | 79 | 0.015 | 109 | 0.000 |
| 20 | 0.010 | 50 | 0.010 | 80 | 0.015 | 110 | 0.000 |
| 21 | 0.010 | 51 | 0.011 | 81 | 0.014 | 111 | 0.000 |
| 22 | 0.010 | 52 | 0.011 | 82 | 0.013 | 112 | 0.000 |
| 23 | 0.010 | 53 | 0.012 | 83 | 0.013 | 113 | 0.000 |
| 24 | 0.010 | 54 | 0.012 | 84 | 0.012 | 114 | 0.000 |
| 25 | 0.010 | 55 | 0.013 | 85 | 0.011 | 115 | 0.000 |
| 26 | 0.010 | 56 | 0.013 | 86 | 0.010 | 116 | 0.000 |
| 27 | 0.010 | 57 | 0.014 | 87 | 0.009 | 117 | 0.000 |
| 28 | 0.010 | 58 | 0.014 | 88 | 0.009 | 118 | 0.000 |
| 29 | 0.010 | 59 | 0.015 | 89 | 0.008 | 119 | 0.000 |
|  |  |  |  |  |  | 120 | 0.000 |