Re: Group long-term policy G.LTC1697 (including G.LTC5398 and G.LTC5498 in Maryland)
Issued by Metropolitan Life Insurance Company (MetLife)

Attached is the filing for the captioned forms. This letter provides an overview of the filing and notes on some of the content. After a careful review of earlier filings, we have endeavored to reflect in this filing additional content based on all the questions submitted by your Department. Hopefully, this will make your review easier and more effective.

## Filing Overview

In addition to this Overview, this filing consists of the Actuarial Memorandum and supporting Attachments based on earlier reviews. These documents are outlined and summarized here for your convenience.

| Title | Description |
| :---: | :---: |
| Actuarial Memorandum Exhibit I | Lifetime Loss Ratio ("LLR") <br> - Without/with proposed phase-in rate increase of 23.12\% <br> - Nationwide earned premium and incurred claims experience <br> - Weighted average statutory discount rate $4.49 \%$ LLR without proposed rate increase - 115.1\% With proposed rate increase - 109.9\% |
| Exhibit II | Demonstration of rate action meeting Rate Stability requirements |
| Attachment 1 | Lifetime Loss Ratio ("LLR") <br> - Without/with proposed phase-in rate increase of 23.12\% <br> - Maryland earned premium and incurred claims experience <br> - Weighted average statutory discount rate $4.49 \%$ LLR without proposed rate increase - 116.9\% With proposed rate increase - 110.9\% |
| Attachment 2 | Comparison of Original Pricing and Current Best Estimate Assumptions |
| Attachment 3 | Actual-to-Expected results for Lapse, Mortality, Incidence and Claim Termination assumptions |


| Attachment 4 | Actual-to-Expected Loss Ratios by Duration <br> LLR without rate increase $-115.1 \% ; \mathrm{A} / \mathrm{E}-1.58$ |
| :--- | :--- |
| Attachment 5 | Actual-to-Expected Loss Ratios by Calendar Year <br> LLR without rate increase $-115.1 \% ; \mathrm{A} / \mathrm{E}-1.60$ |

## Additional Notes

MetLife requests the rate action based on deviations from anticipated experience outlined in the Actuarial Memorandum and the supporting attachments. Lifetime Loss Ratios exceed all minimum requirements in Maryland as well as the application of rate stability standards even at the full requested rate action. In addition, though Maryland-only experience is not necessarily credible, it is provided in this filing for your information only.

We note that, despite the rate action requested, the experience of the block does not fully return to pricing levels. In general, the rate action addresses primarily future experience and does not seek to recover historical losses. We will continue, of course, to monitor and adjust experience assumptions and reserve the right to update those in the future along with requesting any resulting changes in premium rates.

Thank you for your consideration. I look forward to hearing from you.

Sincerely,


William P. Bigelow, FSA, MAAA
Vice President and Actuary, Metropolitan Life Insurance Company

# METROPOLITAN LIFE INSURANCE COMPANY 

# New York, NY <br> <br> Actuarial Memorandum for AARP Group Policy 

 <br> <br> Actuarial Memorandum for AARP Group Policy}

April 25, 2017
This actuarial memorandum pertains to long-term care insurance provided under a group policy issued to AARP (previously known as "American Association of Retired Persons") to cover eligible members and their spouses who meet the eligibility requirements specified in the policy.

## Policy Forms

The premium rate schedule increase for which we are seeking approval will apply to the following certificate forms approved by your Department and that were issued under the group long-term care policy G.LTC1697 (sitused in District of Columbia):

- G.LTC5398
- G.LTC5498


## 1. Purpose of Filing

This actuarial memorandum has been prepared for the purpose of demonstrating that the anticipated loss ratio standard of this product meets the minimum requirements of your state and may not be suitable for other purposes.

## 2. Description of Benefits

There are two options available: the Comprehensive Plan and the Facilities Plan. Both plans pay benefits up to a monthly benefit limit ("MBL") determined by the chosen Nursing Home daily benefit amount multiplied by the number of days in a given month (except for those plans that multiply by 30 days in February). There is no limit to benefits payable on a daily basis, except for Respite Care, which is subject to a daily benefit limit ("DBL").

## Comprehensive Plan

There are five types of benefits covered under the Comprehensive Plan. These benefits are Nursing Home (and In-Patient Hospice care), Assisted Living Facility, Home Care (including Adult Day Care and At-Home Hospice care), Informal Care and Respite Care benefits.
I. Nursing Home Care

The benefit reimburses $100 \%$ of room and board charges in a Nursing Home, up to the MBL for Skilled, Intermediate, and Custodial Care. Also covered under the Nursing Home benefit are Hospice services and Bed reservation charges in a Nursing Home.

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## II. Assisted Living Facility Care

The benefit reimburses 100\% of room and board charges in an Assisted Living Facility, up to the MBL for maintenance or personal care.

## III. Home Care

The benefit will be paid for Home Care services and reimburses 100\% of the charges from licensed providers, up to $50 \%$ or $80 \%$ of the MBL (as chosen by the insured). Covered under the Home Care benefit are services received from a Registered Nurse, Licensed Practical Nurse, Licensed Vocational Nurse, Home Health Aide, Homemaker, Physical, Occupational and Speech Therapist, Adult Day Care Centers, At-Home Hospice care, and Ongoing Care Advisory Services.
IV. Informal Home Care

The benefit will be paid for Informal Home Care Services provided from a family member or an unlicensed, private provider and reimburses $100 \%$ of the charges from informal caregivers, up to $50 \%$ of the Home Care monthly benefit limit (therefore, either $25 \%$ or $40 \%$ of the MBL).
V. Respite Care

The benefit will be paid for Respite Care Services provided at home or in a Nursing Home or Assisted Living Facility and reimburses 100\% of the charges from licensed providers, up to a daily limit that varies according to the type of service received. Respite Care Benefits are limited to 21 days per calendar year.

## Facilities Plan

There are three types of benefits covered under the Facilities Plan. These benefits are Nursing Home (and In-Patient Hospice care), Assisted Living Facility and Respite Care benefits.
I. Nursing Home Care

The benefit reimburses $100 \%$ of room and board charges in a Nursing Home, up to the MBL for Skilled, Intermediate, and Custodial Care. Also covered under the Nursing Home benefit are Hospice services and Bed reservation charges in a Nursing Home.

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II. Assisted Living Facility Care

The benefit reimburses 100\% of room and board charges in an Assisted Living Facility, up to the MBL for maintenance or personal care.

## III. Respite Care

The benefit will be paid for Respite Care Services provided in a Nursing Home or Assisted Living Facility and reimburses $100 \%$ of the charges from licensed providers, up to a daily limit that varies according to the type of service received. Respite Care Benefits are limited to 21 days per calendar year.

## 3. Renewability

These policy forms are guaranteed renewable for life.

## 4. Applicability

This filing is applicable to the group long-term care insurance certificates shown on the first page issued to AARP from June 1, 2000 to January 22, 2007 with a group policy situs within District of Columbia. No in-force premium rate schedule increase has been previously implemented for these forms.

We will only implement a premium rate schedule increase for certificates issued to residents of your state after we have received approval from your Department. We will implement the amount of the increase approved by your Department irrespective of the amount of the increase approved by the District of Columbia (where the long-term care insurance policy issued to AARP was sitused). These policy forms are no longer being marketed to AARP members and spouses.

## 5. Actuarial Assumptions

a. Expected Claim Costs are the product of attained age frequency rates and continuance curves, adjusted by utilization factors and underwriting selection factors based on actual experience through June 30, 2015.
b. Voluntary Termination Rates vary by duration as developed from actual experience through June 30, 2015 and are shown in the following table:

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Voluntary Termination Rates

| Policy Duration | Lapse Rate |
| :---: | :---: |
| 1 | $5.50 \%$ |
| 2 | $3.50 \%$ |
| 3 | $2.50 \%$ |
| 4 | $2.00 \%$ |
| 5 | $1.50 \%$ |
| 6 | $1.25 \%$ |
| $7+$ | $1.00 \%$ |

In the year of rate increase implementation, it is assumed that an additional $1.1 \%$ of policies lapse and there is $0.3 \%$ net reduction to premiums and benefits due to benefit downgrades. There is no adverse selection assumed due to the additional lapse rates.
c. Mortality $88 \%$ of Annuity 2000 Basic Table with selection consistent with experience.
d. Expenses Expenses have not been explicitly projected. It is assumed that the originally filed expense assumptions remain appropriate.

The above assumptions are based on actual inforce experience of MetLife and are deemed reasonable for the group policy form, including certificate forms issued under such group policy. In establishing the assumptions described in this section, the policy design, underwriting, and claims adjudication practices for the above-referenced policy forms were taken into consideration.

The assumptions described above were developed from the actual historical experience on these forms and supplemented, as needed, based on the experience of other forms. The projections contained in this actuarial memorandum are based on the best estimate assumptions, as described above, except the projections include a margin for moderately adverse experience equal to $5 \%$ of projected future incurred claims.

## 6. Marketing Method

These policy forms were issued to provide coverage to eligible AARP members and spouses. The primary method of marketing was direct mail.

## 7. Underwriting Description

Certain health information was required of applicants at the time of enrollment, including answering questions on the enrollment form regarding medical history, supplemented by contacting health care providers for medical records, as well as telephone and face-to-face interviews as needed.

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## 8. Premiums

Premium rates varied based upon the age of the insured at issue and the particular benefit variations selected. If two or more members of the same household purchased coverage, a household discount was applied. The monthly EFT Premium was equal to the monthly premium less $\$ 2$.

## 9. Issue Age Range

The issue age is 18 and over.

## 10. Area Factors

Area factors are not used for this product.

## 11. Reserves

Active life reserves have not been used in this rate increase analysis. Claim reserves as of December 31, 2015 have been discounted to the incurral date of each respective claim and included in historical incurred claims. Incurred but not reported reserve balances as of December 31, 2015 have been allocated to a calendar year of incurral and included in historical incurred claims.

## 12. Trend Assumptions

As this is not medical insurance, we have not included any explicit medical cost trends in the projections.

## 13. Past and Future Policy Experience

Nationwide experience and specific experience for those certificates issued in Maryland are shown in Exhibit I and Attachment 1, respectively.

Historical experience is shown by claim incurral year. Claim payments and reserves were discounted to the mid-point of the year of incurral at the weighted average maximum valuation interest rate for contract reserves which is $4.49 \%$. Incurred but not reported reserves were allocated based on a historical analysis of claim development pattern.

Annual loss ratios are calculated, with and without interest, as incurred claims divided by earned premiums.

A lifetime loss ratio as of December 31, 2015 is calculated as the sum of accumulated past experience and discounted future experience where accumulation and discounting occur at the weighted average maximum valuation interest rate for contract reserves, which is $4.49 \%$.

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## 14. Projected Earned Premiums and Incurred Claims

Earned premiums for projection years 2016 through 2096 are developed by multiplying each prior period's earned premium (starting with December 31, 2015 actual earned premium) by a persistency factor. For a year in which the rate increase is effective, the earned premium prior to the increase is multiplied by 1 plus the rate increase percent and an effectiveness factor.

Incurred claims for each projection year combine the impact of incidence rates, claim continuance rates and utilization factors by the policy benefits on a seriatim basis.

Present and accumulated values in the lifetime projections in Exhibit I and II are determined at the average maximum valuation interest rate for contract reserves applicable to LTC business issued in the years in which the applicable business of this filing were issued. The maximum valuation interest rate averages $4.49 \%$.

The assumptions used in Exhibit I and II projections are developed from the company's LTC insurance experience, plus a margin for moderately adverse experience.

Projections in Exhibit II provide a demonstration that the sum of the accumulated value of incurred claims without the inclusion of active life reserves, and the present value of future projected incurred claims, without the inclusion of active life reserves, will not be less than the sum of the following:

1. Accumulated value of the initial earned premium times $58 \%$;
2. $85 \%$ of the accumulated value of prior premium rate schedule increases;
3. Present value of future projected initial earned premium times $58 \%$; and
4. $85 \%$ of the present value of future projected premium in excess of the projected initial earned premium.

## 15. History of Previous Inforce Rate Increases

There has not been any rate increase on these policy forms.

## 16. Requested Rate Increase

The company is requesting a phased-in series of rate increases (two phases of $10 \%$ each and a final phase of $1.75 \%$ ), resulting in a cumulative compounded increase of $23.12 \%$ after the final phase. These phased increases are actuarially equivalent to a single one-time increase of $20.80 \%$. Although a larger premium rate increase is currently supportable under loss ratio regulation, MetLife agreed with AARP to reduce the impact on AARP members by seeking the rate increase shown above.

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Corresponding rate tables reflecting each of the three phases for the $23.12 \%$ cumulative compounded increase are included with this filing. Please note that the actual rates implemented may vary slightly from those filed due to implementation rounding algorithms.

## 17. Analysis Performed

The initial premium schedule was based on pricing assumptions believed to be appropriate, given the information available at the time the initial rate schedule was developed. The original pricing assumptions for claim costs, voluntary termination rates, and mortality were as follows:
a. Incidence and continuance rates for nursing home care and home health care rates were based on studies from the 1985 National Nursing Home Survey and 1982-84 National Long Term Care

Survey, respectively, with modifications to incorporate experience of other long-term care business that MetLife issued or administered, as well as to incorporate industry expectations.
b. Voluntary termination rates by duration were assumed to be $11 \%$ in year one, grading down to $4.5 \%$ in year ten and thereafter.
c. Mortality was based on the 1983 Group Annuity Mortality Table, adjusted to remove loading. These rates vary by age and sex.

As part of the inforce management of the business, MetLife monitors the performance of the business by completing periodic analyses of lapse rates, mortality rates, claim incidence rates, claim continuance rates and claim utilization rates. The findings from these analyses were used to determine the current experience assumptions on a best estimate basis. A margin for moderately adverse experience equal to $5 \%$ of projected future incurred claims was added to the best estimate assumptions. A model of this business was developed for use in the cash flow testing that is part of the company's annual statutory reporting requirements. Using this model, a future projection of these policies under the new moderately adverse assumptions was performed and the projected lifetime loss ratio for these policies was determined. For these policies, the past experience and future projections based on current moderately adverse assumptions combine to a resulting loss ratio that exceeds both original pricing expectations and state minimum requirements.

The experience analysis, management's view of when a change to the original rate schedule may be considered and the seriatim inforce and claim data used in developing the projections in Exhibit I and II have been relied upon by the actuary in the development of this memorandum.

## 18. Loss Ratio Requirement Compliance Demonstration

Projected experience assuming the increase is implemented is shown in Exhibit I and II. As shown in these exhibits, the expected lifetime loss ratios, with and without the requested rate increase, exceed

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the minimum loss ratio requirement.

## 19. Average Annual Premium

The average September 30, 2016 annualized premium for all premium-paying certificate holders before and after the current requested increase are:

Before increase:
After Phase 1:
After Phase 2:
After Phase 3:
\$1,623
\$1,785
\$1,964
\$1,998

## 20. Proposed Effective Date

The rate increase will apply to certificate holders on the anniversary of their original coverage effective date, following at least a 60-day notification period after the increase is approved.
21. Nationwide Distribution of Business as of September 30, 2016 (based on premium-paying certificates inforce count)
By Issue Age:

| Issue Age | Percent |
| :---: | :---: |
| $<45$ | $<1 \%$ |
| $45-49$ | $1 \%$ |
| $50-54$ | $16 \%$ |
| $55-59$ | $23 \%$ |
| $60-64$ | $27 \%$ |
| $65-69$ | $20 \%$ |
| $70-74$ | $9 \%$ |
| $75+$ | $3 \%$ |
| Total | $100 \%$ |

By Benefit Period:

| Benefit Period | Percent |
| :---: | :---: |
| 4 Year | $53 \%$ |
| Unlimited | $47 \%$ |
| Total | $100 \%$ |

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By Inflation Option:

| Inflation | Percent |
| :---: | :---: |
| Optional | $89 \%$ |
| Auto 5\% Compound | $11 \%$ |
| Total | $100 \%$ |

By Home Care Percentage:

| Home Care \% | Percent |
| :---: | :---: |
| $0 \%$ (FC Only) | $22 \%$ |
| $50 \%$ | $67 \%$ |
| $80 \%$ | $11 \%$ |
| Total | $100 \%$ |

By Elimination Period:

| Days | Percent |
| :---: | :---: |
| 20 | N/A |
| 30 | $100 \%$ |
| 45 | N/A |
| 60 | N/A |
| 90 | N/A |
| Total | $100 \%$ |

By Gender:

| Gender | Percent |
| :---: | :---: |
| Female | $61 \%$ |
| Male | $39 \%$ |
| Total | $100 \%$ |

## 22. Number of Insured Lives

As of September 30, 2016, the number of premium-paying insured lives inforce and their premiums that will be affected by this increase are:

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|  | Issued Before Rate |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Stability Regulation Effective Date <br> Number of <br> Insured Lives | 2016 | Issued On or After Rate Stability <br> Regulation Effective Date <br> Number of | 2016 |
| Annualized Premium | Insured Lives | Annualized Premium |  |  |
| Certificates issued <br> in Maryland <br> Certificates issued <br> nationwide | 572 | $\$ 1,042,403$ | 717 | $\$ 1,158,899$ |

## 23. Actuarial Certification

I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries, and I meet the Academy's qualification standards for preparing health rate filings and to render the actuarial opinion contained herein.

This memorandum has been prepared in conformity with all applicable Actuarial Standards of Practice, including ASOP No. 8.

I hereby certify that, to the best of my knowledge and judgment, this rate submission is in compliance with the applicable laws and regulations of Maryland.

I further certify that:

- if the requested premium rate schedule increase is implemented and the underlying assumptions, which reflect moderately adverse conditions, are realized, no further premium rate schedule increases are anticipated;
- the analysis described in Section 17 of this memorandum was used in determining the need for a rate increase;
- the policy design, underwriting and claims adjudication practices have been reviewed and taken into consideration in this rate increase request;
- the actuarial assumptions used are appropriate and the gross premiums bear reasonable relationship to the benefits; and
- the relationship between renewal premium rate schedules and new business premium rate schedules is not applicable because MetLife is no longer issuing new business on these policy forms.


[^0]Vice President and Actuary, Metropolitan Life Insurance Company

Exhibit 1
Metropolitan Life Insurance Company Nationwide Experience Projections With No Future Increase Group Policy Form: G.LTC. 1697


Note:

- The projections are based on the assumptions derived using experience data through June 30, 2015
- Includes certificate forms G.LTC5398 and G.LTC5498 issued under group policy G.LTC. 1697

Exhibit 1
Metropolitan Life Insurance Company
Nationwide Experience Projections With 23.12\% Future Increase
Group Policy Form: G.LTC. 1697


Note:

- The projections are based on the assumptions derived using experience data through June 30, 2015

Includes certificate forms G.LTC5398 and G.LTC5498 issued under group policy G.LTC. 1697

- The current requested increase of $23.12 \%$ is assumed to be implemented over three phases with the 1st phase starting January 2018; 2nd phase starting April 2019 ; and 3rd phase starting July 2020


## Exhibit II

Demonstration that Lifetime Incurred Claims with Requested Increase are Not Less than Lifetime Earned Premium with Prescribed Factors Group Policy Form: G.LTC. 1697

| 1. Accumulated value of initial earned premium | 2,351,151,085 | x 58\% | = | 1,363,667,629 |
| :---: | :---: | :---: | :---: | :---: |
| 2a. Accumulated value of earned premium | 2,351,151,085 |  |  |  |
| 2 b . Accumulated value of prior premium rate schedule increases (2a-1) | 0 | 85\% | $=$ | 0 |
| 3. Present value of future projected initial earned premium | 877,206,514 | 58\% | $=$ | 508,779,778 |
| 4a. Present value of future projected premium | 998,410,611 |  |  |  |
| 4b. Present value of future projected premium in excess of the projected initial earned premiums (4a-3) | 121,204,098 | 85\% | = | 103,023,483 |
| 5. Lifetime Earned Premium Times Prescribed Factor: Sum of 1, 2b, 3, and 4b |  |  |  | 1,975,470,890 |
| 6a. Accumulated value of incurred claims without the inclusion of active life reserves |  |  |  | 1,035,091,238 |
| 6 b . Present value of future projected incurred claims without the inclusion of active life reserves |  |  |  | 2,646,457,604 |
| 7. Lifetime Incurred Claims with Rate Increase: Sum of 6a and 6b |  |  |  | 3,681,548,842 |
| 8. Test: 7 is not less than 5 |  |  |  | TRUE |

Attachment 1
Metropolitan Life Insurance Company Maryland Specific Experience Projections With No Future Increase Group Policy Form: G.LTC. 1697


Note:

- The projections are based on the assumptions derived using experience data through June 30, 2015 - Includes certificate forms G.LTC5398 and G.LTC5498 issued under group policy G.LTC. 1697


## Metropolitan Life Insurance Company <br> Maryland Specific Experience Projections With 23.12\% Future Increase

Group Policy Form: G.LTC. 1697

| Calendar Year |  | Loss Ratio Demonstration |  |  |  |  |  |  | Factors Derived from Projected Values for Illustrative Purposes Only |  |  |  |  |  | Interest Rate Factors |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Without Interest |  |  |  | With Interest |  |  | Premium Increase Factor | Benefit Downgrade | Persistency Factors |  |  |  | Calendar Year Effective Int Rate | Mid-Year Disc/ Accum |
|  |  | Earned Premium | Incurred Claims | $\begin{aligned} & \text { Loss } \\ & \text { Ratio } \end{aligned}$ | $\begin{gathered} \text { Life } \\ \text { Years } \end{gathered}$ | $\begin{aligned} & \text { Earned } \\ & \text { Premium } \end{aligned}$ | Incurred Claims | $\begin{aligned} & \text { Loss } \\ & \text { Ratio } \end{aligned}$ |  |  | Policy Lapse \& Mortality | Shock | Policy Persistency | $\begin{gathered} \text { Premium } \\ \text { Persistency } \end{gathered}$ |  |  |
| Historical Experience | 1997 |  | - | N/A |  | - | - | N/A |  |  |  |  |  |  | 4.49\% | 2.2544 |
|  | 1998 |  |  | N/A | - | - | - | N/A |  |  |  |  |  |  | 4.49\% | 2.1575 |
|  | 1999 |  | - | N/A | 1 | - | - | N/A |  |  |  |  |  |  | 4.49\% | 2.0648 |
|  | 2000 | 89,918 | - | 0.0\% | 334 | 177,677 | - | 0.0\% |  |  |  |  |  |  | 4.49\% | 1.9760 |
|  | 2001 | 645,355 | 2,310 | 0.4\% | 686 | 1,220,394 | 4,368 | 0.4\% |  |  |  |  |  |  | 4.49\% | 1.8910 |
|  | 2002 | 939,193 | - | 0.0\% | 920 | 1,699,706 | - | 0.0\% |  |  |  |  |  |  | 4.49\% | 1.8098 |
|  | 2003 | 1,389,084 | 352,710 | 25.4\% | 1,280 | 2,405,828 | 610,878 | 25.4\% |  |  |  |  |  |  | 4.49\% | 1.7320 |
|  | 2004 | 1,756,640 | 146,967 | 8.4\% | 1,496 | 2,911,628 | 243,597 | 8.4\% |  |  |  |  |  |  | 4.49\% | 1.6575 |
|  | 2005 | 2,110,460 | 1,033,973 | 49.0\% | 1,631 | 3,347,706 | 1,640,134 | 49.0\% |  |  |  |  |  |  | 4.49\% | 1.5862 |
|  | 2006 | 2,199,641 | 584,655 | 26.6\% | 1,602 | 3,339,175 | 887,538 | 26.6\% |  |  |  |  |  |  | 4.49\% | 1.5181 |
|  | 2007 | 2,210,588 | 482,750 | 21.8\% | 1,563 | 3,211,532 | 701,336 | 21.8\% |  |  |  |  |  |  | 4.49\% | 1.4528 |
|  | 2008 | 2,210,974 | 401,444 | 18.2\% | 1,532 | 3,074,010 | 558,145 | 18.2\% |  |  |  |  |  |  | 4.49\% | 1.3903 |
|  | 2009 | 2,190,506 | 756,378 | 34.5\% | 1,506 | 2,914,627 | 1,006,416 | 34.5\% |  |  |  |  |  |  | 4.49\% | 1.3306 |
|  | 2010 | 2,160,398 | 701,835 | 32.5\% | 1,473 | 2,750,994 | 893,698 | 32.5\% |  |  |  |  |  |  | 4.49\% | 1.2734 |
|  | 2011 | 2,120,931 | 770,026 | 36.3\% | 1,436 | 2,584,636 | 938,379 | 36.3\% |  |  |  |  |  |  | 4.49\% | 1.2186 |
|  | 2012 | 2,123,970 | 1,350,656 | 63.6\% | 1,409 | 2,477,071 | 1,575,197 | 63.6\% |  |  |  |  |  |  | 4.49\% | 1.1662 |
|  | 2013 | 2,106,240 | 1,950,287 | 92.6\% | 1,390 | 2,350,797 | 2,176,736 | 92.6\% |  |  |  |  |  |  | 4.49\% | 1.1161 |
|  | 2014 | 2,113,715 | 1,707,379 | 80.8\% | 1,365 | 2,257,724 | 1,823,704 | 80.8\% |  |  |  |  |  |  | 4.49\% | 1.0681 |
|  | 2015 | 2,068,926 | 1,589,173 | 76.8\% | 1,330 | 2,114,883 | 1,624,473 | 76.8\% |  |  |  |  |  |  | 4.49\% | 1.0222 |
| ProjectedFutureExperience | 2016 | 2,085,276 | 1,842,351 | 88.4\% | 1,284 | 2,039,962 | 1,802,316 | 88.4\% | 1.0000 | 1.0000 | 0.0348 | 1.0000 | 0.965 | N/A | 4.49\% | 0.9783 |
|  | 2017 | 1,981,185 | 2,032,447 | 102.6\% | 1,236 | 1,854,815 | 1,902,808 | 102.6\% | 1.0000 | 1.0000 | 0.0370 | 1.0000 | 0.963 | 0.950 | 4.49\% | 0.9362 |
|  | 2018 | 1,962,987 | 2,211,944 | 112.7\% | 1,180 | 1,758,774 | 1,981,833 | 112.7\% | 1.0542 | 0.9984 | 0.0451 | 0.9940 | 0.955 | 0.947 | 4.49\% | 0.8960 |
|  | 2019 | 1,980,417 | 2,387,688 | 120.6\% | 1,125 | 1,698,113 | 2,047,328 | 120.6\% | 1.1344 | 0.9970 | 0.0467 | 0.9890 | 0.953 | 0.944 | 4.49\% | 0.8575 |
|  | 2020 | 1,987,090 | 2,578,530 | 129.8\% | 1,075 | 1,630,590 | 2,115,920 | 129.8\% | 1.2108 | 0.9970 | 0.0447 | 0.9890 | 0.955 | 0.940 | 4.49\% | 0.8206 |
|  | 2021 | 1,888,308 | 2,769,798 | 146.7\% | 1,024 | 1,482,918 | 2,175,165 | 146.7\% | 1.2290 | 0.9970 | 0.0472 | 0.9890 | 0.953 | 0.936 | 4.49\% | 0.7853 |
|  | 2022 | 1,763,316 | 2,955,811 | 167.6\% | 973 | 1,325,230 | 2,221,457 | 167.6\% | 1.2312 | 0.9970 | 0.0504 | 0.9890 | 0.950 | 0.932 | 4.49\% | 0.7516 |
|  | 2023 | 1,636,002 | 3,133,873 | 191.6\% | 921 | 1,176,690 | 2,254,031 | 191.6\% | 1.2312 | 0.9970 | 0.0534 | 0.9890 | 0.947 | 0.928 | 4.49\% | 0.7192 |
|  | 2024 | 1,510,663 | 3,302,311 | 218.6\% | 868 | 1,039,832 | 2,273,073 | 218.6\% | 1.2312 | 0.9970 | 0.0569 | 0.9890 | 0.943 | 0.923 | 4.49\% | 0.6883 |
|  | 2025 | 1,387,962 | 3,455,038 | 248.9\% | 816 | 914,303 | 2,275,965 | 248.9\% | 1.2312 | 0.9970 | 0.0603 | 0.9890 | 0.940 | 0.919 | 4.49\% | 0.6587 |
|  | 2026 | 1,268,678 | 3,592,597 | 283.2\% | 764 | 799,799 | 2,264,844 | 283.2\% | 1.2312 | 0.9970 | 0.0640 | 0.9890 | 0.936 | 0.914 | 4.49\% | 0.6304 |
|  | 2027 | 1,153,547 | 3,712,323 | 321.8\% | 712 | 695,957 | 2,239,714 | 321.8\% | 1.2312 | 0.9970 | 0.0681 | 0.9890 | 0.932 | 0.909 | 4.49\% | 0.6033 |
|  | 2028 | 1,042,871 | 3,805,645 | 364.9\% | 660 | 602,136 | 2,197,315 | 364.9\% | 1.2312 | 0.9970 | 0.0721 | 0.9890 | 0.928 | 0.904 | 4.49\% | 0.5774 |
|  | 2029 | 937,458 | 3,869,218 | 412.7\% | 610 | 518,004 | 2,137,984 | 412.7\% | 1.2312 | 0.9970 | 0.0766 | 0.9890 | 0.923 | 0.899 | 4.49\% | 0.5526 |
|  | 2030 | 837,752 | 3,902,519 | 465.8\% | 560 | 443,010 | 2,063,684 | 465.8\% | 1.2312 | 0.9970 | 0.0809 | 0.9890 | 0.919 | 0.894 | 4.49\% | 0.5288 |
|  | 2031 | 743,997 | 3,902,376 | 524.5\% | 512 | 376,519 | 1,974,897 | 524.5\% | 1.2312 | 0.9970 | 0.0860 | 0.9890 | 0.914 | 0.888 | 4.49\% | 0.5061 |
|  | 2032 | 656,482 | 3,865,282 | 588.8\% | 466 | 317,947 | 1,872,034 | 588.8\% | 1.2312 | 0.9970 | 0.0908 | 0.9890 | 0.909 | 0.882 | 4.49\% | 0.4843 |
|  | 2033 | 575,376 | 3,796,224 | 659.8\% | 421 | 266,686 | 1,759,550 | 659.8\% | 1.2312 | 0.9970 | 0.0956 | 0.9890 | 0.904 | 0.876 | 4.49\% | 0.4635 |
|  | 2034 | 500,791 | 3,695,099 | 737.9\% | 378 | 222,138 | 1,639,052 | 737.9\% | 1.2312 | 0.9970 | 0.1021 | 0.9890 | 0.898 | 0.870 | 4.49\% | 0.4436 |
|  | 2035 | 432,675 | 3,563,903 | 823.7\% | 338 | 183,673 | 1,512,898 | 823.7\% | 1.2312 | 0.9970 | 0.1064 | 0.9890 | 0.894 | 0.864 | 4.49\% | 0.4245 |
|  | 2036 | 370,986 | 3,403,408 | 917.4\% | 300 | 150,716 | 1,382,659 | 917.4\% | 1.2312 | 0.9970 | 0.1135 | 0.9890 | 0.887 | 0.857 | 4.49\% | 0.4063 |
|  | 2037 | 315,564 | 3,216,984 | 1,019.4\% | 264 | 122,689 | 1,250,740 | 1,019.4\% | 1.2312 | 0.9970 | 0.1190 | 0.9890 | 0.881 | 0.851 | 4.49\% | 0.3888 |
|  | 2038 | 266,228 | 3,014,748 | 1,132.4\% | 231 | 99,058 | 1,121,725 | 1,132.4\% | 1.2312 | 0.9970 | 0.1254 | 0.9890 | 0.875 | 0.844 | 4.49\% | 0.3721 |
|  | 2039 | 222,767 | 2,793,997 | 1,254.2\% | 200 | 79,324 | 994,897 | 1,254.2\% | 1.2312 | 0.9970 | 0.1320 | 0.9890 | 0.868 | 0.837 | 4.49\% | 0.3561 |
|  | 2040 | 184,819 | 2,564,262 | 1,387.4\% | 173 | 62,982 | 873,840 | 1,387.4\% | 1.2312 | 0.9970 | 0.1388 | 0.9890 | 0.861 | 0.830 | 4.49\% | 0.3408 |
|  | 2041 | 152,000 | 2,330,643 | 1,533.3\% | 147 | 49,571 | 760,085 | 1,533.3\% | 1.2312 | 0.9970 | 0.1458 | 0.9890 | 0.854 | 0.822 | 4.49\% | 0.3261 |
|  | 2042 | 123,851 | 2,095,926 | 1,692.3\% | 125 | 38,655 | 654,153 | 1,692.3\% | 1.2312 | 0.9970 | 0.1530 | 0.9890 | 0.847 | 0.815 | 4.49\% | 0.3121 |
|  | 2043 | 99,952 | 1,865,365 | 1,866.3\% | 105 | 29,855 | 557,166 | 1,866.3\% | 1.2312 | 0.9970 | 0.1600 | 0.9890 | 0.840 | 0.807 | 4.49\% | 0.2987 |
|  | 2044 | 79,851 | 1,641,433 | 2,055.6\% | 87 | 22,826 | 469,203 | 2,055.6\% | 1.2312 | 0.9970 | 0.1662 | 0.9890 | 0.834 | 0.799 | 4.49\% | 0.2858 |
|  | 2045 | 63,114 | 1,428,586 | 2,263.5\% | 72 | 17,266 | 390,806 | 2,263.5\% | 1.2312 | 0.9970 | 0.1768 | 0.9890 | 0.823 | 0.790 | 4.49\% | 0.2736 |
|  | 2046 | 49,363 | 1,229,183 | 2,490.1\% | 59 | 12,923 | 321,802 | 2,490.1\% | 1.2312 | 0.9970 | 0.1845 | 0.9890 | 0.816 | 0.782 | 4.49\% | 0.2618 |
|  | 2047 | 38,176 | 1,044,644 | 2,736.4\% | 47 | 9,565 | 261,733 | 2,736.4\% | 1.2312 | 0.9970 | 0.1927 | 0.9890 | 0.807 | 0.773 | 4.49\% | 0.2505 |
|  | 2048 | 29,177 | 875,849 | 3,001.8\% | 38 | 6,996 | 210,008 | 3,001.8\% | 1.2312 | 0.9970 | 0.2007 | 0.9890 | 0.799 | 0.764 | 4.49\% | 0.2398 |
|  | 2049 | 22,028 | 725,354 | 3,292.9\% | 30 | 5,055 | 166,446 | 3,292.9\% | 1.2312 | 0.9970 | 0.2096 | 0.9890 | 0.790 | 0.755 | 4.49\% | 0.2295 |
|  | 2050 | 16,414 | 592,708 | 3,611.0\% | 23 | 3,605 | 130,161 | 3,611.0\% | 1.2312 | 0.9970 | 0.2190 | 0.9890 | 0.781 | 0.745 | 4.49\% | 0.2196 |
|  | 2051 | 12,063 | 477,913 | 3,961.9\% | 18 | 2,535 | 100,440 | 3,961.9\% | 1.2312 | 0.9970 | 0.2321 | 0.9890 | 0.768 | 0.735 | 4.49\% | 0.2102 |
|  | 2052 | 8,698 | 378,897 | 4,356.1\% | 14 | 1,749 | 76,207 | 4,356.1\% | 1.2312 | 0.9970 | 0.2351 | 0.9890 | 0.765 | 0.721 | 4.49\% | 0.2011 |
|  | 2053 | 6,158 | 296,610 | 4,816.9\% | 10 | 1,185 | 57,092 | 4,816.9\% | 1.2312 | 0.9970 | 0.2657 | 0.9890 | 0.734 | 0.708 | 4.49\% | 0.1925 |
|  | 2054 | 4,292 | 227,259 | 5,295.1\% | 7 | 791 | 41,863 | 5,295.1\% | 1.2312 | 0.9970 | 0.2637 | 0.9890 | 0.736 | 0.697 | 4.49\% | 0.1842 |
|  | 2055 | 2,941 | 170,597 | 5,799.9\% | 5 | 519 | 30,074 | 5,799.9\% | 1.2312 | 0.9970 | 0.2943 | 0.9890 | 0.706 | 0.685 | 4.49\% | 0.1763 |
|  | 2056 | 1,977 | 124,785 | 6,311.6\% | 4 | 334 | 21,053 | 6,311.6\% | 1.2312 | 0.9970 | 0.2906 | 0.9890 | 0.709 | 0.672 | 4.49\% | 0.1687 |
|  | 2057 | 1,299 | 88,704 | 6,829.6\% | 3 | 210 | 14,322 | 6,829.6\% | 1.2312 | 0.9970 | 0.3059 | 0.9890 | 0.694 | 0.657 | 4.49\% | 0.1615 |
|  | 2058 | 831 | 60,413 | 7,267.4\% | 2 | 128 | 9,335 | 7,267.4\% | 1.2312 | 0.9970 | 0.3257 | 0.9890 | 0.674 | 0.640 | 4.49\% | 0.1545 |
|  | 2059 | 514 | 38,997 | 7,590.7\% | 1 | 76 | 5,767 | 7,590.7\% | 1.2312 | 0.9970 | 0.4034 | 0.9890 | 0.597 | 0.618 | 4.49\% | 0.1479 |
|  | 2060 | 312 | 23,916 | 7,662.5\% | 1 | 44 | 3,385 | 7,662.5\% | 1.2312 | 0.9970 | 0.3524 | 0.9890 | 0.648 | 0.608 | 4.49\% | 0.1415 |
|  | 2061 | 184 | 13,277 | 7,208.3\% | 0 | 25 | 1,798 | 7,208.3\% | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.1354 |
|  | 2062 | 102 | 6,633 | 6,521.9\% | 0 | 13 | 860 | 6,521.9\% | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.1296 |
|  | 2063 | 54 | 3,277 | 6,099.3\% | 0 | , | 407 | 6,099.3\% | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.1240 |
|  | 2064 | 30 | 1,381 | 4,638.9\% | 0 | 4 | 164 | 4,638.9\% | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.1187 |
|  | 2065 | 16 | 817 | 5,057.9\% | 0 | 2 | 93 | 5,057.9\% | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.1136 |
|  | 2066 | 9 | 303 | 3,214.5\% | 0 | 1 | 33 | 3,214.5\% | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.1087 |
|  | 2067 | 6 | 184 | 3,069.4\% | 0 | 1 | 19 | 3,069.4\% | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.1040 |
|  | 2068 | 4 | 106 | 2,843.2\% | 0 | , | 11 | 2,843.2\% | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.0996 |
|  | 2069 | 2 | 49 | 2,282.9\% | 0 | 0 | 5 | 2,282.9\% | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.0953 |
|  | 2070 | 1 | 17 | 1,274.0\% | - | 0 | 2 | 1,274.0\% | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.0912 |
|  | 2071 | 0 | 11 | 2,218.0\% | - | 0 | 1 | 2,218.0\% | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.0873 |
|  | 2072 | - | - | N/A | - | - | - | N/A | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.0835 |
|  | 2073 | - | - | N/A | - | - | - | N/A | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.0799 |
|  | 2074 | - | - | N/A | - | - | - | N/A | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.0765 |
|  | 2075 | - | - | N/A | - | - | - | N/A | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.0732 |
|  | 2076-2096 | - | - | N/A | - | - | - | N/A | 1.2312 | 0.9970 | N/A | 0.9890 | N/A | N/A | 4.49\% | 0.0701 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Past | 28,436,539 | 11,830,543 | 41.6\% | 20,954 | 38,838,388 | 14,684,599 | 37.8\% |  |  |  |  |  |  |  |  |
|  | Future | 28,406,617 | 95,112,213 | 334.8\% | 17,890 | 20,065,805 | 50,620,223 | 252.3\% |  |  |  |  |  |  |  |  |
|  | Lifetime | 56,843,156 | 106,942,755 | 188.1\% | 38,844 | 58,904,194 | 65,304,822 | 110.9\% |  |  |  |  |  |  |  |  |

Note:

- The projections are based on the assumptions derived using experience data through June 30, 2015
- Includes certificate forms G.LTC5398 and G.LTC5498 issued under group policy G.LTC. 1697
- The current requested increase of $23.12 \%$ is assumed to be implemented over three phases with the 1st phase starting January 2018; 2nd phase starting April 2019; and 3rd phase starting July 2020


## Metropolitan Life Insurance Company

## Group Policy Form: G.LTC1697, Certificate Forms: G.LTC5398 and G.LTC5498

 Comparison of Original Pricing and Current Best Estimate Assumptions
## Original Pricing Assumptions

Discount Rate
Voluntary Lapse Rates

| Policy <br> Duration | Lapse <br> Rate |
| :---: | :---: |
| 1 | $11.00 \%$ |
| 2 | $5.30 \%$ |
| 3 | $5.10 \%$ |
| 4 | $4.90 \%$ |
| 5 | $4.80 \%$ |
| 6 | $4.70 \%$ |
| 7 | $4.65 \%$ |
| 8 | $4.60 \%$ |
| 9 | $4.55 \%$ |
| $10+$ | $4.50 \%$ |

Active Life Mortality Rates Mortality was based on the 1983 Group Annuity Mortality Table adjusted to remove loading

## Morbidity:

Incidence

Continuance

## Utilization

Incidence rates for nursing home care and home health care were based on studies from the 1985 National Nursing Home Survey and 1982-84 National Long Term Care Survey, respectively, with modifications to incorporate experience of other long-term care business that MetLife issued or administered, as well as to incorporate industry expectation.

Continuance rates for nursing home care and home health care were based on studies from the 1985 National Nursing Home Survey and 1982-84 National Long Term Care Survey, respectively, with modifications to incorporate experience of other long-term care business that MetLife issued or administered, as well as to incorporate industry expectation.

Home care prevalence rates were based on 1982-1984 National Long Term Care Surveys with modifications. Note that the actual utilization assumption at original pricing is not available

## Current Best Estimate Assumptions

4.49\%

| Policy <br> Duration | Lapse <br> Rate |
| :---: | :---: |
| 1 | $5.50 \%$ |
| 2 | $3.50 \%$ |
| 3 | $2.50 \%$ |
| 4 | $2.00 \%$ |
| 5 | $1.50 \%$ |
| 6 | $1.25 \%$ |
| $7+$ | $1.00 \%$ |

88\% Annuity 2000 Basic Table with Mortality Selection Factors of:

| Policy <br> Duration | Mortality <br> Selection |
| :---: | :---: |
| 1 | $25.00 \%$ |
| 2 | $50.00 \%$ |
| 3 | $55.00 \%$ |
| 4 | $65.00 \%$ |
| 5 | $70.00 \%$ |
| 6 | $75.00 \%$ |
| 7 | $80.00 \%$ |
| 8 | $85.00 \%$ |
| 9 | $90.00 \%$ |
| 10 | $95.00 \%$ |
| $11+$ | $100.00 \%$ |

Sample Ultimate Smoothed Incidence Rates (before gross-up to zero-day elimination)

| Attained Age | Facility Care |  | Home Care |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Male | Female | Male | Female |
| 81 | 1.62\% | 1.89\% | 1.49\% | 1.48\% |
| 82 | 1.93\% | 2.31\% | 1.79\% | 1.65\% |
| 83 | 2.25\% | 2.75\% | 1.92\% | 1.85\% |
| 84 | 2.44\% | 3.31\% | 2.24\% | 2.05\% |
| 85 | 2.55\% | 3.85\% | 2.43\% | 2.30\% |

Termination curves were constructed separately for deaths and recoveries, gender and car path. Coefficients to an exponential-shaped curve were based on experience adjusted to minimize differences between actual and expected terminations in total as well as at periodic duration points along the curves. Death and recovery termination rates were recombined into a single termination table for modelling and valuation uses.

| Home Care | Facility Care |
| :---: | :---: |
| $72 \%$ | $87 \%$ |

Attachment 3
Metropolitan Life Insurance Company Group Policy Form: G.LTC1697 Actual-to-Expected Results - Lapse

| Lapse (AARP-Met) |  |  |  |
| :---: | :---: | :---: | :---: |
| Policy <br> Duration | Actual | Expected * | A/E\% |
| 1 | 6,624 | 6,653 | $99.57 \%$ |
| 2 | 3,765 | 4,040 | $93.19 \%$ |
| 3 | 2,702 | 2,795 | $96.67 \%$ |
| 4 | 2,056 | 2,177 | $94.44 \%$ |
| 5 | 1,545 | 1,595 | $96.86 \%$ |
| 6 | 1,410 | 1,301 | $108.39 \%$ |
| 7 | 1,207 | 1,018 | $118.54 \%$ |
| 8 | 1,052 | 991 | $106.11 \%$ |
| 9 | 906 | 937 | $96.67 \%$ |
| 10 | 845 | 864 | $97.78 \%$ |
| 11 | 752 | 772 | $97.42 \%$ |
| 12 | 557 | 657 | $84.75 \%$ |
| 13 | 438 | 512 | $85.51 \%$ |
| $14+$ | 703 | 780 | $90.18 \%$ |

Attachment 3
Metropolitan Life Insurance Company Group Policy Form: G.LTC1697 Actual-to-Expected Results - Mortality

| Mortality (AARP-Met) |  |  |  |
| :---: | :---: | :---: | :---: |
| Policy <br> Duration | Actual | Expected * | A/E\% |
| 1 | 535 | 534 | $100.22 \%$ |
| 2 | 923 | 1,113 | $82.96 \%$ |
| 3 | 1,110 | 1,297 | $85.55 \%$ |
| 4 | 1,316 | 1,637 | $80.39 \%$ |
| 5 | 1,529 | 1,874 | $81.59 \%$ |
| 6 | 1,656 | 2,093 | $79.11 \%$ |
| 7 | 1,798 | 2,308 | $77.89 \%$ |
| 8 | 1,931 | 2,475 | $78.03 \%$ |
| 9 | 1,976 | 2,597 | $76.08 \%$ |
| 10 | 2,042 | 2,655 | $76.90 \%$ |
| 11 | 1,926 | 2,463 | $78.18 \%$ |
| 12 | 1,714 | 2,058 | $83.30 \%$ |
| 13 | 1,473 | 1,673 | $88.07 \%$ |
| $14+$ | 2,710 | 2,829 | $95.80 \%$ |

* The expecteds are based on current best estimate assumptions.


## Attachment 3

Metropolitan Life Insurance Company
Group Policy Form: G.LTC1697
Actual-to-Expected Results - Incidence

| Incidence (AARP-Met) |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Female |  |  |  |  |  | Male |  |  |  |  |  |
|  | Facility Care |  |  | Home Care |  |  | Facility Care |  |  | Home Care |  |  |
| Calendar Year | Actual Claims ${ }^{1}$ | Expected Claims $^{2}$ | A/E\% | Actual Claims ${ }^{1}$ | Expected Claims $^{2}$ | A/E\% | Actual Claims ${ }^{1}$ | Expected Claims ${ }^{2}$ | A/E\% | Actual Claims ${ }^{1}$ | Expected Claims ${ }^{2}$ | A/E\% |
| 2001 | 4 | 2 | 169\% | 5 | 2 | 227\% | 2 | 2 | 124\% | 1 | 1 | 69\% |
| 2002 | 21 | 15 | 144\% | 13 | 13 | 100\% | 10 | 9 | 111\% | 7 | 9 | 82\% |
| 2003 | 50 | 41 | 123\% | 52 | 35 | 147\% | 24 | 24 | 100\% | 24 | 22 | 109\% |
| 2004 | 72 | 71 | 102\% | 63 | 61 | 103\% | 43 | 42 | 103\% | 48 | 38 | 127\% |
| 2005 | 111 | 100 | 111\% | 83 | 83 | 100\% | 57 | 59 | 96\% | 49 | 52 | 94\% |
| 2006 | 139 | 138 | 101\% | 126 | 109 | 115\% | 99 | 81 | 122\% | 83 | 70 | 119\% |
| 2007 | 189 | 178 | 106\% | 153 | 135 | 113\% | 102 | 104 | 98\% | 92 | 87 | 106\% |
| 2008 | 243 | 222 | 109\% | 178 | 159 | 112\% | 117 | 127 | 92\% | 106 | 103 | 103\% |
| 2009 | 285 | 266 | 107\% | 180 | 181 | 100\% | 143 | 148 | 97\% | 97 | 117 | 83\% |
| 2010 | 295 | 309 | 95\% | 214 | 200 | 107\% | 169 | 169 | 100\% | 121 | 131 | 93\% |
| 2011 | 352 | 352 | 100\% | 180 | 216 | 83\% | 216 | 189 | 114\% | 116 | 140 | 83\% |
| 2012 | 411 | 398 | 103\% | 233 | 232 | 101\% | 212 | 208 | 102\% | 134 | 150 | 89\% |
| 2013 | 418 | 445 | 94\% | 241 | 245 | 98\% | 235 | 228 | 103\% | 169 | 158 | 107\% |
| 2014 | 464 | 482 | 96\% | 238 | 260 | 92\% | 225 | 243 | 93\% | 175 | 167 | 105\% |
| 2015 | 448 | 504 | 89\% | 221 | 266 | 83\% | 216 | 254 | 85\% | 165 | 170 | 97\% |
| Total | 3,502 | 3,523 | 99\% | 2,180 | 2,198 | 99\% | 1,870 | 1,886 | 99\% | 1,387 | 1,413 | 98\% |

${ }^{1}$ Based on actual experience through 12/31/2015 including adjustments for incurred but not reported claims.
${ }^{2}$ The expected claims are based on current best estimate assumptions.

Attachment 3
Metropolitan Life Insurance Company
Group Policy Form: G.LTC1697
Actual-to-Expected Results - Claim Termination

|  | Claim Termination (AARP-Met) |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Calendar Year | Actual Deaths | Expected Deaths ${ }^{1}$ | Actual Recoveries | Expected Recoveries ${ }^{1}$ | Deaths A/E\% | Recoveries A/E\% | Total A/E\% |
| 1991 | 1 | 1 | 1 | 0 | 84\% | 393\% | 138\% |
| 1992 | 6 | 4 | 2 | 1 | 138\% | 221\% | 153\% |
| 1993 | 10 | 9 | 6 | 2 | 107\% | 332\% | 143\% |
| 1994 | 22 | 25 | 5 | 5 | 88\% | 110\% | 91\% |
| 1995 | 37 | 38 | 7 | 7 | 96\% | 106\% | 97\% |
| 1996 | 59 | 56 | 13 | 9 | 106\% | 138\% | 111\% |
| 1997 | 73 | 73 | 25 | 12 | 100\% | 200\% | 114\% |
| 1998 | 106 | 90 | 20 | 16 | 118\% | 129\% | 120\% |
| 1999 | 122 | 118 | 110 | 19 | 104\% | 564\% | 169\% |
| 2000 | 125 | 157 | 34 | 26 | 79\% | 130\% | 87\% |
| 2001 | 217 | 211 | 33 | 35 | 103\% | 94\% | 102\% |
| 2002 | 291 | 297 | 51 | 49 | 98\% | 103\% | 99\% |
| 2003 | 374 | 394 | 73 | 67 | 95\% | 109\% | 97\% |
| 2004 | 507 | 515 | 101 | 88 | 98\% | 115\% | 101\% |
| 2005 | 619 | 633 | 128 | 110 | 98\% | 117\% | 101\% |
| 2006 | 771 | 788 | 173 | 133 | 98\% | 130\% | 102\% |
| 2007 | 895 | 923 | 143 | 152 | 97\% | 94\% | 97\% |
| 2008 | 1,069 | 1,091 | 173 | 184 | 98\% | 94\% | 97\% |
| 2009 | 1,251 | 1,258 | 163 | 211 | 99\% | 77\% | 96\% |
| 2010 | 1,430 | 1,433 | 226 | 238 | 100\% | 95\% | 99\% |
| 2011 | 1,621 | 1,589 | 210 | 262 | 102\% | 80\% | 99\% |
| 2012 | 1,728 | 1,780 | 209 | 294 | 97\% | 71\% | 93\% |
| 2013 | 2,015 | 1,985 | 268 | 334 | 102\% | 80\% | 98\% |
| 2014 | 2,222 | 2,113 | 358 | 356 | 105\% | 101\% | 105\% |
| 2015 (through Q2) | 1,162 | 1,257 | 300 | 213 | 92\% | 141\% | 99\% |
| Total | 16,733 | 16,839 | 2,832 | 2,823 | 99\% | 100\% | 100\% |

${ }^{1}$ The expected deaths and recoveries are based on current best estimate assumptions.

Metropolitan Life Insurance Company
Nationwide Experience Projections With No Rate Increase Group Policy Form: G.LTC1697, Certificate Forms: G.LTC5398 and G.LTC5498 Actual to Expected Loss Ratios by Duration

| Duration | Actual / Projected Experience ual Experience through 12/31/2015 tions based on Current Assumptions |  |  | Expected Pricing Experience roduced based on Original Pricing Assumptions since inception |  |  | G = C / F |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | A | B | $C=B / A$ | D | E | F = E / D |  |
|  | Earned Premium | Incurred Claims | Loss <br> Ratio | Earned Premium | Incurred Claims | Loss Ratio | Actual to Expected Ratio |
| 1 | 67,782,673 | 5,347,359 | 7.9\% | 67,782,673 | 5,076,371 | 7.5\% | 1.05 |
| 2 | 126,439,569 | 11,511,284 | 9.1\% | 126,439,569 | 22,358,218 | 17.7\% | 0.51 |
| 3 | 124,429,437 | 23,582,236 | 19.0\% | 114,596,135 | 29,732,500 | 25.9\% | 0.73 |
| 4 | 123,529,953 | 34,378,286 | 27.8\% | 103,691,898 | 36,127,038 | 34.8\% | 0.80 |
| 5 | 122,877,531 | 34,181,793 | 27.8\% | 93,605,797 | 42,846,607 | 45.8\% | 0.61 |
| 6 | 122,390,785 | 42,430,986 | 34.7\% | 84,124,471 | 52,586,317 | 62.5\% | 0.55 |
| 7 | 121,795,007 | 45,341,480 | 37.2\% | 75,151,487 | 55,568,242 | 73.9\% | 0.50 |
| 8 | 120,962,666 | 51,676,063 | 42.7\% | 66,585,503 | 55,777,328 | 83.8\% | 0.51 |
| 9 | 119,776,899 | 66,146,558 | 55.2\% | 58,969,399 | 56,835,843 | 96.4\% | 0.57 |
| 10 | 118,265,393 | 65,436,593 | 55.3\% | 52,093,131 | 56,780,484 | 109.0\% | 0.51 |
| 11 | 116,548,674 | 73,064,261 | 62.7\% | 45,766,147 | 55,764,902 | 121.8\% | 0.51 |
| 12 | 114,509,311 | 83,647,522 | 73.0\% | 40,005,992 | 55,945,919 | 139.8\% | 0.52 |
| 13 | 112,376,991 | 92,979,848 | 82.7\% | 34,784,211 | 54,817,173 | 157.6\% | 0.53 |
| 14 | 109,879,361 | 102,542,044 | 93.3\% | 30,090,896 | 52,495,910 | 174.5\% | 0.53 |
| 15 | 106,652,787 | 107,088,585 | 100.4\% | 25,898,807 | 51,471,445 | 198.7\% | 0.51 |
| 16 | 102,892,915 | 117,184,213 | 113.9\% | 22,164,544 | 49,363,348 | 222.7\% | 0.51 |
| 17 | 98,755,968 | 128,703,089 | 130.3\% | 18,863,411 | 46,611,666 | 247.1\% | 0.53 |
| 18 | 93,947,014 | 139,531,207 | 148.5\% | 15,963,262 | 44,721,570 | 280.2\% | 0.53 |
| 19 | 88,287,912 | 151,055,649 | 171.1\% | 13,433,246 | 41,944,442 | 312.2\% | 0.55 |
| 20 | 82,297,825 | 160,542,369 | 195.1\% | 11,251,866 | 38,965,506 | 346.3\% | 0.56 |
| 21 | 76,339,359 | 169,749,516 | 222.4\% | 9,366,440 | 36,713,604 | 392.0\% | 0.57 |
| 22 | 70,475,504 | 178,144,216 | 252.8\% | 7,750,417 | 34,094,358 | 439.9\% | 0.57 |
| 23 | 64,740,101 | 185,666,421 | 286.8\% | 6,386,153 | 31,345,604 | 490.8\% | 0.58 |
| 24 | 59,163,994 | 192,135,493 | 324.8\% | 5,225,982 | 29,010,603 | 555.1\% | 0.59 |
| 25 | 53,778,192 | 197,267,278 | 366.8\% | 4,262,396 | 26,649,090 | 625.2\% | 0.59 |
| 26 | 48,612,340 | 201,054,516 | 413.6\% | 3,450,738 | 24,332,058 | 705.1\% | 0.59 |
| 27 | 43,694,056 | 203,404,752 | 465.5\% | 2,785,393 | 22,418,319 | 804.9\% | 0.58 |
| 28 | 39,044,002 | 204,230,317 | 523.1\% | 2,231,812 | 20,478,029 | 917.6\% | 0.57 |
| 29 | 34,679,161 | 203,519,625 | 586.9\% | 1,785,843 | 18,486,835 | 1035.2\% | 0.57 |
| 30 | 30,611,117 | 201,276,208 | 657.5\% | 1,408,062 | 16,858,003 | 1197.2\% | 0.55 |
| 31 | 26,846,004 | 197,512,178 | 735.7\% | 1,109,916 | 15,256,760 | 1374.6\% | 0.54 |
| 32 | 23,386,757 | 192,264,723 | 822.1\% | 867,737 | 13,708,182 | 1579.8\% | 0.52 |
| 33 | 20,232,337 | 185,560,759 | 917.1\% | 672,632 | 12,336,019 | 1834.0\% | 0.50 |
| 34 | 17,377,621 | 177,475,212 | 1021.3\% | 522,831 | 10,936,575 | 2091.8\% | 0.49 |
| 35 | 14,813,364 | 168,037,415 | 1134.4\% | 396,774 | 9,621,196 | 2424.9\% | 0.47 |
| 36 | 12,528,072 | 157,478,915 | 1257.0\% | 300,106 | 8,453,265 | 2816.8\% | 0.45 |
| 37 | 10,508,879 | 146,045,477 | 1389.7\% | 225,273 | 7,309,062 | 3244.5\% | 0.43 |
| 38 | 8,741,458 | 134,051,848 | 1533.5\% | 171,447 | 6,229,143 | 3633.3\% | 0.42 |
| 39 | 7,207,230 | 121,689,269 | 1688.4\% | 125,291 | 5,194,222 | 4145.7\% | 0.41 |
| 40 | 5,887,555 | 109,185,903 | 1854.5\% | 86,525 | 4,242,865 | 4903.6\% | 0.38 |
| 41 | 4,763,445 | 96,903,951 | 2034.3\% | 59,754 | 2,930,096 | 4903.6\% | 0.41 |
| 42 | 3,815,602 | 85,037,813 | 2228.7\% | 41,266 | 2,023,506 | 4903.6\% | 0.45 |
| 43 | 3,024,765 | 73,749,737 | 2438.2\% | 28,498 | 1,397,421 | 4903.6\% | 0.50 |
| 44 | 2,371,794 | 63,221,180 | 2665.5\% | 19,680 | 965,050 | 4903.6\% | 0.54 |
| 45 | 1,838,383 | 53,579,913 | 2914.5\% | 13,591 | 666,458 | 4903.6\% | 0.59 |
| 46 | 1,407,662 | 44,903,975 | 3190.0\% | 9,386 | 460,251 | 4903.6\% | 0.65 |
| 47 | 1,064,857 | 37,156,985 | 3489.4\% | 6,482 | 317,847 | 4903.6\% | 0.71 |
| 48 | 795,182 | 30,325,277 | 3813.6\% | 4,476 | 219,503 | 4903.6\% | 0.78 |
| 49 | 585,196 | 24,374,444 | 4165.2\% | 3,091 | 151,587 | 4903.6\% | 0.85 |
| 50 | 423,761 | 19,238,949 | 4540.1\% | 2,135 | 104,685 | 4903.6\% | 0.93 |
| 51 | 301,533 | 14,880,277 | 4934.9\% | 1,474 | 72,295 | 4903.6\% | 1.01 |
| 52 | 210,710 | 11,232,635 | 5330.8\% | 1,018 | 49,927 | 4903.6\% | 1.09 |
| 53 | 144,174 | 8,251,088 | 5723.0\% | 703 | 34,479 | 4903.6\% | 1.17 |
| 54 | 96,094 | 5,875,614 | 6114.4\% | 486 | 23,811 | 4903.6\% | 1.25 |
| 55 | 61,996 | 4,022,510 | 6488.4\% | 335 | 16,444 | 4903.6\% | 1.32 |
| 56 | 38,470 | 2,631,259 | 6839.7\% | 232 | 11,356 | 4903.6\% | 1.39 |
| 57 | 22,823 | 1,624,395 | 7117.4\% | 160 | 7,842 | 4903.6\% | 1.45 |
| 58 | 12,798 | 951,313 | 7433.6\% | 110 | 5,416 | 4903.6\% | 1.52 |
| 59 | 6,711 | 537,344 | 8007.3\% | 76 | 3,740 | 4903.6\% | 1.63 |
| 60 | 3,278 | 307,115 | 9367.9\% | 53 | 2,583 | 4903.6\% | 1.91 |
|  |  |  |  |  |  |  |  |
| Lifetime | 2,884,055,004 | 5,640,927,236 | 195.6\% | 1,150,587,218 | 1,268,928,919 | 110.3\% | 1.77 |
| Lifetime* | 1,661,370,209 | 1,911,729,669 | 115.1\% | 754,286,086 | 550,642,431 | 73.0\% | 1.58 |

Note:

* Columns $A$ and $B$ are discounted back to the inception date at an interest rate of $4.49 \%$, which is the weighted average maximum valuation interest rate for contract reserves. Columns $D$ and $E$ are discounted back to the inception date at the original pricing interest rate of $6.25 \%$.

Nationwide Experience Projections With No Rate Increase
Group Policy Form: G.LTC1697, Certificate Forms: G.LTC5398 and G.LTC5498
Actual to Expected Loss Ratios by Calendar Year

|  | Calendar Year | Actual / Projected Experience |  |  | Expected Pricing Experience |  |  |  | Accumulative Loss Ratio as of 12/31/2015 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | A | B | $\mathrm{C}=\mathrm{B} / \mathrm{A}$ | D | E | F = E/D | $\mathbf{G}=\mathbf{C} / \mathrm{F}$ | H | I | $\mathrm{J}=\mathrm{H} / \mathrm{l}$ |
|  |  | Earned Premium | Incurred Claims | $\begin{aligned} & \text { Loss } \\ & \text { Ratio } \end{aligned}$ | Earned Premium | Incurred Claims | $\begin{aligned} & \text { Loss } \\ & \text { Ratio } \end{aligned}$ | Actual to Expected Ratio | Actual/Projected at 4.49\% (on C) | $\begin{gathered} \text { Expected at } 6.25 \% \\ \text { (on F) } \\ \hline \end{gathered}$ | Actual to Expected Ratio |
| Historical Experience | 1997 | 35,397 | 0 | 0.0\% | 35,397 | 2,651 | 7.5\% | 0.00 | 0.0\% | 7.5\% | 0.00 |
|  | 1998 | 2,709,604 | 68,198 | 2.5\% | 972,967 | 91,928 | 9.4\% | 0.27 | 2.5\% | 9.4\% | 0.26 |
|  | 1999 | 13,623,438 | 1,218,378 | 8.9\% | 7,607,979 | 994,205 | 13.1\% | 0.68 | 7.8\% | 12.6\% | 0.62 |
|  | 2000 | 33,640,515 | 3,784,749 | 11.3\% | 24,268,678 | 3,798,867 | 15.7\% | 0.72 | 10.1\% | 14.8\% | 0.68 |
|  | 2001 | 56,030,732 | 9,542,806 | 17.0\% | 44,791,679 | 8,324,849 | 18.6\% | 0.92 | 13.7\% | 16.9\% | 0.81 |
|  | 2002 | 73,030,614 | 15,466,210 | 21.2\% | 60,025,634 | 13,452,324 | 22.4\% | 0.94 | 16.6\% | 19.2\% | 0.86 |
|  | 2003 | 93,258,676 | 21,382,522 | 22.9\% | 71,429,320 | 19,165,048 | 26.8\% | 0.85 | 18.6\% | 21.6\% | 0.86 |
|  | 2004 | 110,391,364 | 27,556,797 | 25.0\% | 85,117,480 | 26,420,959 | 31.0\% | 0.80 | 20.3\% | 24.1\% | 0.84 |
|  | 2005 | 120,405,983 | 31,288,106 | 26.0\% | 91,064,154 | 33,465,043 | 36.7\% | 0.71 | 21.6\% | 26.7\% | 0.81 |
|  | 2006 | 122,056,862 | 46,138,589 | 37.8\% | 87,913,941 | 38,989,799 | 44.3\% | 0.85 | 24.4\% | 29.5\% | 0.83 |
|  | 2007 | 122,545,837 | 41,747,270 | 34.1\% | 80,909,262 | 43,235,169 | 53.4\% | 0.64 | 25.8\% | 32.4\% | 0.80 |
|  | 2008 | 122,235,837 | 55,569,213 | 45.5\% | 73,839,187 | 46,832,460 | 63.4\% | 0.72 | 28.2\% | 35.4\% | 0.80 |
|  | 2009 | 120,757,506 | 57,171,692 | 47.3\% | 66,611,880 | 49,319,232 | 74.0\% | 0.64 | 30.1\% | 38.2\% | 0.79 |
|  | 2010 | 119,346,889 | 65,016,196 | 54.5\% | 59,761,091 | 50,716,026 | 84.9\% | 0.64 | 32.3\% | 41.0\% | 0.79 |
|  | 2011 | 116,674,370 | 74,542,532 | 63.9\% | 53,382,242 | 51,457,567 | 96.4\% | 0.66 | 34.7\% | 43.6\% | 0.80 |
|  | 2012 | 115,249,590 | 86,299,083 | 74.9\% | 47,489,766 | 51,705,162 | 108.9\% | 0.69 | 37.4\% | 46.1\% | 0.81 |
|  | 2013 | 112,701,598 | 86,366,307 | 76.6\% | 42,061,500 | 51,510,547 | 122.5\% | 0.63 | 39.7\% | 48.4\% | 0.82 |
|  | 2014 | 110,776,029 | 88,987,863 | 80.3\% | 37,082,020 | 51,055,866 | 137.7\% | 0.58 | 41.9\% | 50.6\% | 0.83 |
|  | 2015 | 107,988,278 | 94,727,074 | 87.7\% | 32,514,070 | 50,254,996 | 154.6\% | 0.57 | 44.0\% | 52.7\% | 0.84 |
| Projected Experience | 2016 | 108,209,580 | 114,512,978 | 105.8\% | 28,360,921 | 49,066,112 | 173.0\% | 0.61 | 46.7\% | 54.7\% | 0.85 |
|  | 2017 | 102,230,496 | 124,628,890 | 121.9\% | 24,608,614 | 47,654,154 | 193.6\% | 0.63 | 49.5\% | 56.5\% | 0.88 |
|  | 2018 | 96,241,863 | 134,716,792 | 140.0\% | 21,239,889 | 45,994,786 | 216.5\% | 0.65 | 52.5\% | 58.2\% | 0.90 |
|  | 2019 | 90,250,935 | 144,420,176 | 160.0\% | 18,234,156 | 44,097,511 | 241.8\% | 0.66 | 55.5\% | 59.7\% | 0.93 |
|  | 2020 | 84,290,375 | 153,662,631 | 182.3\% | 15,568,954 | 42,101,837 | 270.4\% | 0.67 | 58.7\% | 61.1\% | 0.96 |
|  | 2021 | 78,389,475 | 162,476,460 | 207.3\% | 13,221,671 | 39,983,003 | 302.4\% | 0.69 | 61.9\% | 62.4\% | 0.99 |
|  | 2022 | 72,572,798 | 170,688,803 | 235.2\% | 11,169,056 | 37,751,822 | 338.0\% | 0.70 | 65.1\% | 63.6\% | 1.02 |
|  | 2023 | 66,868,294 | 178,131,929 | 266.4\% | 9,384,962 | 35,531,103 | 378.6\% | 0.70 | 68.4\% | 64.6\% | 1.06 |
|  | 2024 | 61,310,409 | 184,622,504 | 301.1\% | 7,843,627 | 33,330,506 | 424.9\% | 0.71 | 71.7\% | 65.6\% | 1.09 |
|  | 2025 | 55,929,712 | 190,029,630 | 339.8\% | 6,521,274 | 31,144,887 | 477.6\% | 0.71 | 75.0\% | 66.4\% | 1.13 |
|  | 2026 | 50,756,852 | 194,225,515 | 382.7\% | 5,393,758 | 29,026,844 | 538.2\% | 0.71 | 78.2\% | 67.2\% | 1.16 |
|  | 2027 | 45,819,299 | 197,155,517 | 430.3\% | 4,438,459 | 26,974,191 | 607.7\% | 0.71 | 81.3\% | 67.8\% | 1.20 |
|  | 2028 | 41,127,185 | 198,669,935 | 483.1\% | 3,632,465 | 24,985,793 | 687.8\% | 0.70 | 84.4\% | 68.4\% | 1.23 |
|  | 2029 | 36,707,642 | 198,777,896 | 541.5\% | 2,956,374 | 23,100,125 | 781.4\% | 0.69 | 87.4\% | 68.9\% | 1.27 |
|  | 2030 | 32,576,133 | 197,477,055 | 606.2\% | 2,392,483 | 21,298,916 | 890.2\% | 0.68 | 90.2\% | 69.4\% | 1.30 |
|  | 2031 | 28,733,954 | 194,752,921 | 677.8\% | 1,925,444 | 19,553,694 | 1015.5\% | 0.67 | 92.9\% | 69.8\% | 1.33 |
|  | 2032 | 25,185,449 | 190,561,273 | 756.6\% | 1,539,599 | 17,882,501 | 1161.5\% | 0.65 | 95.5\% | 70.1\% | 1.36 |
|  | 2033 | 21,931,559 | 184,914,044 | 843.1\% | 1,223,051 | 16,278,860 | 1331.0\% | 0.63 | 97.8\% | 70.4\% | 1.39 |
|  | 2034 | 18,969,144 | 178,002,428 | 938.4\% | 964,750 | 14,732,658 | 1527.1\% | 0.61 | 100.1\% | 70.7\% | 1.42 |
|  | 2035 | 16,291,741 | 169,885,353 | 1042.8\% | 755,712 | 13,248,027 | 1753.1\% | 0.59 | 102.1\% | 70.9\% | 1.44 |
|  | 2036 | 13,890,413 | 160,611,790 | 1156.3\% | 588,376 | 11,811,021 | 2007.4\% | 0.58 | 103.9\% | 71.1\% | 1.46 |
|  | 2037 | 11,753,103 | 150,422,711 | 1279.9\% | 454,196 | 10,415,240 | 2293.1\% | 0.56 | 105.6\% | 71.2\% | 1.48 |
|  | 2038 | 9,866,628 | 139,498,709 | 1413.8\% | 346,379 | 9,049,828 | 2612.7\% | 0.54 | 107.1\% | 71.4\% | 1.50 |
|  | 2039 | 8,215,741 | 128,080,469 | 1559.0\% | 260,701 | 7,679,371 | 2945.7\% | 0.53 | 108.4\% | 71.5\% | 1.52 |
|  | 2040 | 6,783,431 | 116,415,617 | 1716.2\% | 194,229 | 6,323,119 | 3255.5\% | 0.53 | 109.6\% | 71.5\% | 1.53 |
|  | 2041 | 5,552,174 | 104,689,235 | 1885.6\% | 142,747 | 5,061,175 | 3545.6\% | 0.53 | 110.6\% | 71.6\% | 1.54 |
|  | 2042 | 4,503,193 | 93,158,981 | 2068.7\% | 102,880 | 3,943,795 | 3833.4\% | 0.54 | 111.4\% | 71.6\% | 1.56 |
|  | 2043 | 3,617,520 | 82,029,845 | 2267.6\% | 72,939 | 2,950,394 | 4045.0\% | 0.56 | 112.2\% | 71.7\% | 1.56 |
|  | 2044 | 2,877,365 | 71,474,220 | 2484.0\% | 51,331 | 2,127,834 | 4145.3\% | 0.60 | 112.8\% | 71.7\% | 1.57 |
|  | 2045 | 2,265,246 | 61,604,904 | 2719.6\% | 36,021 | 1,505,905 | 4180.6\% | 0.65 | 113.3\% | 71.7\% | 1.58 |
|  | 2046 | 1,764,381 | 52,513,580 | 2976.3\% | 25,231 | 1,060,338 | 4202.5\% | 0.71 | 113.7\% | 71.7\% | 1.59 |
|  | 2047 | 1,358,426 | 44,255,860 | 3257.9\% | 17,669 | 743,050 | 4205.4\% | 0.77 | 114.0\% | 71.7\% | 1.59 |
|  | 2048 | 1,033,785 | 36,843,198 | 3563.9\% | 12,373 | 520,439 | 4206.2\% | 0.85 | 114.3\% | 71.7\% | 1.59 |
|  | 2049 | 777,313 | 30,279,132 | 3895.4\% | 8,665 | 364,557 | 4207.3\% | 0.93 | 114.5\% | 71.7\% | 1.60 |
|  | 2050 | 577,126 | 24,538,575 | 4251.9\% | 6,069 | 255,394 | 4208.5\% | 1.01 | 114.6\% | 71.7\% | 1.60 |
|  | 2051 | 422,515 | 19,581,340 | 4634.5\% | 4,249 | 178,932 | 4210.7\% | 1.10 | 114.8\% | 71.7\% | 1.60 |
|  | 2052 | 303,812 | 15,353,781 | 5053.7\% | 2,975 | 125,368 | 4214.6\% | 1.20 | 114.9\% | 71.7\% | 1.60 |
|  | 2053 | 214,752 | 11,800,178 | 5494.8\% | 2,082 | 87,758 | 4214.6\% | 1.30 | 114.9\% | 71.7\% | 1.60 |
|  | 2054 | 149,395 | 8,860,069 | 5930.6\% | 1,458 | 61,430 | 4214.6\% | 1.41 | 115.0\% | 71.7\% | 1.60 |
|  | 2055 | 101,765 | 6,482,195 | 6369.8\% | 1,020 | 43,001 | 4214.6\% | 1.51 | 115.0\% | 71.7\% | 1.60 |
|  | 2056 | 67,578 | 4,614,413 | 6828.3\% | 714 | 30,101 | 4214.6\% | 1.62 | 115.0\% | 71.7\% | 1.60 |
|  | 2057 | 43,599 | 3,202,193 | 7344.6\% | 500 | 21,071 | 4214.6\% | 1.74 | 115.0\% | 71.7\% | 1.60 |
|  | 2058 | 27,343 | 2,146,346 | 7849.7\% | 350 | 14,745 | 4214.6\% | 1.86 | 115.1\% | 71.7\% | 1.60 |
|  | 2059 | 16,693 | 1,397,355 | 8371.1\% | 243 | 10,226 | 4214.6\% | 1.99 | 115.1\% | 71.7\% | 1.60 |
|  | 2060 | 9,922 | 885,426 | 8923.6\% | 163 | 6,854 | 4214.6\% | 2.12 | 115.1\% | 71.7\% | 1.60 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | Past | 1,673,459,119 | 806,873,584 | 48.2\% | 966,878,247 | 590,792,697 | 61.1\% | 0.79 | 41.9\% | 50.6\% | 0.83 |
|  | Future | 1,210,586,116 | 4,833,052,851 | 399.2\% | 183,708,777 | 678,128,276 | 369.1\% | 1.08 | 281.1\% | 272.6\% | 1.03 |
|  | Lifetime | 2,884,045,235 | 5,639,926,435 | 195.6\% | 1,150,587,024 | 1,268,920,973 | 110.3\% | 1.77 | 115.1\% | 72.0\% | 1.60 |


[^0]:    William P. Bigelow, FSA, MAAA

