Metropolitan Life Insurance Company 1300 Hall Boulevard, Bloomfield, CT 06002

Email: mark.newton@metlife.com



Mark D. Newton, FSA, MAAA

August 18, 2019

Maryland Insurance Administration 200 St. Paul Place, Suite 2700, Baltimore, MD 21202

Re: LTC.02, et al, administered by MetLife on behalf of Teachers Insurance and Annuity Association ("TIAA"), LTC.03 administered by MetLife on behalf of Teachers Insurance and Annuity Association ("TIAA"), TCL-LTC.04 Ed. 4/00 issued by Metropolitan Life Insurance Company (MetLife)

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 previous 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 Attachments on specific aspects of the Maryland Administrative Code as well as supporting data based on earlier reviews. These documents are outlined and summarized here for your convenience.

Title	Description	
Actuarial Memorandum		
Exhibit I-A	Lifetime Loss Ratio ("LLR")	
	• <i>Nationwide</i> experience	
	 Without/with proposed rate increase of 15.00% 	
	 Weighted average statutory rate 4.51% 	
	LLR without rate increase – 117.1%	
	LLR with rate increase – 114.2%	
Exhibit II-A	Demonstration of rate action meeting Rate Stability	
	(58/85) limitations	
Exhibit I-B	Lifetime Loss Ratio ("LLR")	
	• <i>Maryland</i> experience	
	 Without/with proposed rate increase of 15.00% 	
	 Weighted average statutory rate 4.51% 	
	LLR without rate increase – 118.1%	
	LLR with rate increase – 114.6%	
Exhibit II-B	Demonstration of rate action meeting Rate Stability	
	(58/85) limitations	

Review of Prior Correspondence	Attachment 1 – Assumptions Summary	
_	Attachment 2 – A/E Ratios (Policy Duration)	
	Attachment 3 – A/E Ratios (Calendar Year)	
	Attachment 4 – A/E Ratios (Lapse, Mortality,	
	Incidence, Claim Termination)	

Rationale for the Rate Increase Request

Exhibit I demonstrates that the combination of historical and projected experience using the most recent Best Estimate assumptions is clearly far beyond the expected loss ratio using the original pricing assumptions. Attachments 2 and 3 support the development of the experience by analyzing the Actual-to-Expected Ratios by Calendar Year and Policy Duration.

Attachment 1 compares the development of the changes in assumptions from the time of original pricing to the latest Experience Study. Generally, worse than expected morbidity and lower decrements are the primary reasons for the rate action.

Assumption Setting and Review

All projection assumptions are based on the Experience Study performed each year. In general, the assumptions used in all projections are those that reproduce historical experience within a non-material degree of tolerance. Attachment 4 shows the Actual-to-Expected Ratios comparing the latest Best Estimate assumptions with the set of actual experience for Lapse, Mortality, Incidence, and Claim Termination.

Some actuarial judgment is used in areas where credibility or trending requires adjustment. In any case, the methodology, results, conclusions and use are prescribed by MetLife internal Standards and Actuarial Standards of Practice and are reviewed and approved by MetLife management, internal auditors, and external auditors.

Calculation of the Rate Request

MetLife's evaluation of the Justifiable Rate Increase ("JRI") uses the industry standard "If Knew" basis. This method calculates the premium needed at time zero to achieve the original loss ratio if all current experience had been known at inception. Of course, the Company cannot retroactively charge such premiums, so all historical losses stemming from past premium shortfalls are taken by the Company.

Additional Notes

COMAR 31.14.01.04A(5) states, "An insurer may not charge a renewal premium rate for a long-term care policy which exceeds by more than 15 percent any premium charged for the policy during the preceding 12 months." The requested rate increase for this filing is 15.00%.

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, the Maryland LLR's still meet the standards above at the full rate action level.

Despite the rate action requested, the experience of the block does not fully return to pricing levels. In general, the rate action restricts consideration of recovering historical losses by focusing on lifetime experience. We will continue, of course, to analyze and adjust experience assumptions and reserve the right to update those in the future along with requesting any resulting changes in premium rates.

The actuarial justification for experience analysis and projections, including assumptions and methods, are reflective of the Code of Professional Conduct and applicable Actuarial Standards of Practice. 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.

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

Sincerely,

Mark D. Newton, FSA, MAAA

Mark Debuton

Actuarial Director, Metropolitan Life Insurance Company

New York, NY

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This actuarial memorandum pertains to individual long-term care policies for which:

- Metropolitan Life Insurance Company ("MetLife") acts as administrator on behalf of Teachers Insurance and Annuity Association ("TIAA"), under an administrative agreement between MetLife and TIAA that became effective on May 1, 2004;
- MetLife acts as administrator on behalf of TIAA-CREF Life Insurance Company ("T-C Life") under an administrative agreement between MetLife and T-C Life that became effective on May 1, 2004; or
- MetLife is the direct insurer through assumption reinsurance agreements with TIAA and T-C Life.

Although separate filings are being submitted for rate increases related to the above described long-term care policies (due to the fact that there are currently three different insuring entities involved – TIAA, T-C Life and MetLife), for purposes of this actuarial memorandum and review and approval of our premium rate schedule increase, we are treating the policies to which the filings relate as one block of business.

Policy Forms

Policy Form Series Originally Issued by TIAA

These policies are either administered by MetLife on behalf of TIAA or assumed by MetLife:

LTC.02 Policy Form Series - this policy form series is referred to as LTC.02 throughout this actuarial memorandum and includes the following policy form(s):

LTC-MD.02 Ed. 11-91 LTC-E-MD.02 Ed. 11-91 LTC-MD.02 (RPU) Ed. 11-91 LTC-E-MD.02 (RPU) Ed. 11-91 LTC-MD.02 Ed. 11-96 LTC-E-MD.02 (RPU) Ed. 11-96 LTC-MD.02 (RPU) Ed. 11-96 LTC-E-MD.02 (RPU) Ed. 11-96

LTC.02 also includes any riders or endorsements approved for issue with the above listed policies.

LTC.03 Policy Form Series - this policy form series is referred to as LTC.03 throughout this actuarial memorandum and includes the following policy form(s):

LTC.03

LTC.03 also includes any riders or endorsements approved for issue with the above listed policy.

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Policy Form Series Originally Issued by T-C Life

These policies are either administered by MetLife on behalf of T-C Life or assumed by MetLife:

TCL-LTC.04 Policy Form Series - this policy form series is referred to as LTC.04 throughout this actuarial memorandum and includes the following policy form(s):

TCL-LTC.04 (MD) ed. 4/00

LTC.04 also includes any riders or endorsements approved for issue with the above listed policy.

Dates of Issue

LTC.02, LTC.03 and LTC.04 are no longer being issued. LTC.02 forms were issued in Maryland from 1992 to 1999. LTC.03 forms were issued in Maryland from 1999 to 2002. LTC.04 forms were issued in Maryland from 2000 to 2004. Nationwide, the last policies were issued in 2004.

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

Each of LTC.02, LTC.03 and LTC.04 is a comprehensive long-term care insurance policy form series. These long-term care policy forms provide benefits for care in a facility and care at home for insureds who are unable to perform a certain number of activities of daily living or who suffer cognitive impairment. Each of the series has optional benefits, including, but not limited to, nonforfeiture and inflation protection benefits.

3. Renewability

These policy forms are guaranteed renewable for life.

4. Applicability

This filing is applicable to inforce policies only, as these policy forms are no longer being sold in the market. The premium changes will apply to the base forms as well as all applicable riders.

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5. Actuarial Assumptions

- a. <u>Expected Claim Costs</u> 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, 2017.
- b. <u>Voluntary Termination Rates</u> vary by duration as developed from actual experience through June 30, 2017 and are shown in the following table:

Voluntary Termination Rates

Policy Duration	Lapse Rate
1	5.00%
2	4.50%
3	3.00%
4	2.00%
5	1.50%
6	0.70%
7	0.70%
8-10	0.60%
11+	0.50%

In the year of rate increase implementation, it is assumed that an additional 1.34% of policies lapse and there is a 0.4% net reduction to premiums and benefits due to benefit downgrades.

- c. Mortality 92% of Annuity 2000 Basic Table with selection consistent with experience.
- d. Adverse Selection No adverse selection is assumed.
- e. <u>Expenses</u>. 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 these particular policy forms. The assumptions used in this filing were developed from the actual experience on these forms and supplemented, as needed, based on the experience of other forms.

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.

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6. Marketing Method

These policy forms were marketed through direct response methods without the use of agents or brokers.

7. Underwriting Description

Individual medical underwriting was performed based on health status, functional capacity, and other health data.

8. Premiums

Premium rates are level premiums from the date of issue except when Periodic Inflation Additions are taken. Premiums do not vary by occupation or sex. Premiums do vary by plan design, payment method, and the selection of additional riders.

9. Issue Age Range

These policy forms were issued up to age 84.

10. Area Factors

Area factors are not used for this product.

11. Premium Modalization Rules

The following modal factors are applied to the annual premium (AP):

Premium Mode	Modal Factors for Direct Payment Methods	Modal Factors for Automatic Payment Methods
Annual	1.00*AP	1.00*AP
Semi-Annual	0.51*AP	0.50699*AP
Quarterly	0.26*AP	0.25527*AP
Monthly	0.088*AP	0.08549*AP

12. Reserves

Active life reserves have not been used in this rate increase analysis. Claim reserves as of December 31, 2017 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, 2017 have been allocated to a calendar year of incurral and included in historical incurred claims.

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13. Trend Assumptions

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

14. Past and Future Policy Experience

Nationwide and Maryland experiences for all policy forms combined are shown in Exhibit I-A and Exhibit I-B respectively. Exhibit I-A normalizes the premium to reflect the prior rate action authorized by Maryland rather than the prior rate action authorized by other states.

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 4.51%. 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, 2017 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 4.51%.

15. Projected Earned Premiums and Incurred Claims

Earned premiums for projection years 2018 through 2098 are developed by multiplying each prior period's earned premium (starting with December 31, 2017 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.

Each projection year claim amount is calculated by multiplying incidence, continuance and utilization factors by the policy and rider benefits on a seriatim basis.

Present and accumulated values in the lifetime projections in Exhibit I-A and Exhibit I-B 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 4.51%.

The assumptions used in the projections in Exhibit I-A and Exhibit I-B were developed from the company's LTC insurance experience.

Projections in Exhibit II-A and Exhibit II-B 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

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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.

16. History of Previous Rate Increases

Round	Authorized %	Authorization Date	Implementation Date
1	15.00%	10/27/2011	6/1/2012
2	15.00%	11/3/2017	5/1/2017
3	9.60%	11/14/2018	5/1/2019

The experience and projections in Exhibit I-A have been restated to reflect a rate level similar to that approved in Maryland on a nationwide basis.

17. Requested Rate Increase

The company is requesting an increase of 15.00% for the policy forms listed above.

Corresponding rate tables reflecting the increase are included with this filing. Please note that the actual rates implemented may vary slightly from those filed due to implementation rounding algorithms.

18. 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, mortality, and interest were as follows:

- a. Incidence and continuance rates for nursing home care were based on a study published by the Society of Actuaries based on the 1985 NNHS with modifications. Home health care incidence and continuance rates were based on the nursing home care rates with modifications.
- b. Voluntary termination rates vary by duration and issue age as shown in the following table¹.

¹ For certain younger issue ages with specific inflation options only, policy form series LTC.02 had slightly higher lapse rates in some durations.

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						Issue	Age					
Duration	25	35	42	47	52	57	62	67	72	77	82	87+
1	5.00%	6.00%	6.00%	6.00%	6.00%	6.00%	4.00%	3.00%	3.00%	3.00%	3.00%	0.00%
2	4.50%	5.50%	5.50%	5.50%	5.50%	5.50%	3.50%	3.00%	3.00%	2.50%	2.50%	0.00%
3	4.00%	5.00%	5.00%	5.00%	5.00%	5.00%	3.00%	3.00%	3.00%	2.00%	2.00%	0.00%
4	3.50%	4.50%	4.50%	4.50%	4.50%	4.50%	3.00%	3.00%	3.00%	2.00%	2.00%	0.00%
5	3.00%	4.00%	4.00%	4.00%	4.00%	4.00%	3.00%	3.00%	3.00%	2.00%	2.00%	0.00%
6	2.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.00%	3.00%	3.00%	2.00%	2.00%	0.00%
7	2.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	2.00%	2.00%	0.00%
8	1.50%	2.50%	2.50%	2.50%	2.50%	2.50%	3.00%	3.00%	3.00%	2.00%	2.00%	0.00%
9	1.00%	2.30%	2.30%	2.30%	2.30%	2.30%	3.00%	3.00%	3.00%	2.00%	2.00%	0.00%
10	1.00%	2.00%	2.00%	2.00%	2.00%	2.00%	3.00%	3.00%	3.00%	2.00%	2.00%	0.00%
11	1.00%	1.80%	1.80%	1.80%	2.00%	2.00%	3.00%	3.00%	3.00%	2.00%	2.00%	0.00%
12	1.00%	1.50%	1.50%	1.50%	2.00%	2.00%	3.00%	3.00%	3.00%	2.00%	2.00%	0.00%
13	1.00%	1.30%	1.30%	1.50%	2.00%	2.00%	3.00%	3.00%	3.00%	2.00%	2.00%	0.00%
14	1.00%	1.00%	1.00%	1.50%	2.00%	2.00%	3.00%	3.00%	3.00%	2.00%	2.00%	0.00%
15	1.00%	1.00%	1.00%	1.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	0.00%
16	1.00%	1.00%	1.00%	1.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	0.00%
17	1.00%	1.00%	1.00%	1.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	0.00%
18	1.00%	1.00%	1.00%	1.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	0.00%
19	1.00%	1.00%	1.00%	1.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	0.00%
20	1.00%	1.00%	1.00%	1.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	0.00%
21	1.00%	1.00%	1.00%	1.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	0.00%
22	1.00%	1.00%	1.00%	1.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	0.00%
23	1.00%	1.00%	1.00%	1.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	0.00%
24	1.00%	1.00%	1.00%	1.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	0.00%
25+	1.00%	1.00%	1.00%	1.50%	2.00%	2.00%	2.00%	1.00%	1.00%	1.00%	1.00%	0.00%

c. Mortality was assumed based on TIAA's own 1983 Table A Merged Gender Mod 1 (with ages set back 4.5 years)

F	
Age	Mortality
22	0.000348
27	0.000435
32	0.000548
37	0.000664
42	0.000857
47	0.001356
52	0.002327
57	0.003694
62	0.005352
67	0.007955
72	0.012906
77	0.021114
82	0.035309
87	0.059251

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92	0.097039
97	0.149565
102	0.363419
107	0.480274
110	1.000000

d. Investment earnings rate was assumed at 5.75%.

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. 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 experience 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 experience assumptions combine to a resulting loss ratio that far exceeds both original pricing expectations and state minimum requirements.

Similar analyses were done for the prior premium rate increases. Since then, morbidity levels have been worse than that assumed in the prior rate increases.

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-A and I-B have been relied upon by the actuary in the development of this memorandum.

19. Loss Ratio Requirement Compliance Demonstration

Projected experience reflecting the implementation of the increase is shown in Exhibit I. As shown in these exhibits, the expected lifetime loss ratio with and without the requested rate increase meet the requirements under rate stability regulations.

20. Average Annual Premium

The average September 30, 2018 annualized premiums for all premium-paying policies issued in Maryland, before and after the current requested increase of 15.00% are:

Before increase: \$2,338 After prior authorized 9.60% increase: \$2,563 After current requested 15.00% increase: \$2,947

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21. Proposed Effective Date

This rate increase will apply to policies on their policy anniversary date following at least a 60-day policyholder notification period following approval.

22. Nationwide Distribution of Business as of September 20, 2018 (based on premium-paying policies inforce count)

By Policy Form:

Policy Form	Count	Percent
LTC.02	6,044	22%
LTC.03	13,224	47%
LTC.04	8,833	31%
Total	28,101	100%

By Issue Age:

Issue		
Ages	Count	Percent
<40	106	0%
40-49	1,292	5%
50-59	9,144	33%
60-64	8,002	28%
65-69	6,319	22%
70-74	2,737	10%
75-79	468	2%
>79	33	0%
Total	28,101	100%

By Elimination Period:

Elimination Period	Count	Percent
30-day	2,503	9%
60-day	569	2%
90-day	23,869	85%
100-day	118	0%

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365-day	1,042	4%
Total	28,101	100%

By Benefit Period:

Benefit		
Period	Count	Percent
3 Year	7,162	25%
5 Year	8,038	29%
7 Year	5,547	20%
Lifetime	7,354	26%
Total	28,101	100%

By Inflation Option:

Inflation Option	Count	Percent
3% Capped	172	1%
5% Capped	250	1%
5% Uncapped	4,028	14%
No Inflation	23,651	84%
Total	28,101	100%

By Home Care Percentage:

нс%	Count	Percent
50%	8,758	31%
100%	19,343	69%
Total	28,101	100%

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23. Number of Policyholders

As of September 30, 2018, the number of premium-paying policies inforce and premiums that will be affected by this increase are:

		efore Rate Stability tion Effective Date	Issued On or After Rate Stability Regulation Effective Date					
	Number of Insured	2018 Annualized Premium	Number of Insured	2018 Annualized Premium				
Maryland	568	\$1,331,933	187	\$433,296				

24. 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.

The projections contained in this actuarial memorandum are based on best estimate assumptions that do not reflect any margins for moderately adverse experience. I certify that (1) if the requested premium rate schedule increase is implemented and (2) unless underlying assumptions which reflect moderately adverse conditions are realized, no further premium rate schedule increases are anticipated. Moderately adverse conditions are interpreted as those conditions where aggregate experience deviates unfavorably from the aggregate experience assumptions used in determining the lifetime projections, such that the value of the deviation is equal to 5% of gross premiums or more

I further certify that

- the analysis described in Section 18 of this memorandum was used in determining the need for a rate increase;
- the policy design, underwriting and claims adjudication practices have been taken into consideration in this rate increase request; and
- the relationship between renewal premium rate schedules and new business premium rate schedules is not applicable because we are no longer marketing new business.

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Mark Delbuton

Mark D. Newton, FSA, MAAA Actuarial Director, Metropolitan Life Insurance Company

Exhibit I-A Metropolitan Life Insurance Company Nationwide Experience Projections (Premium Normalized to Include Prior Authorized Increases) Policy Forms: LTC.02, LTC.03 and LTC.04

Part				Manual Ind	Loss R	Ratio Demonstra		Maral. 1			tors Derived f	rom Projected Values			nly	Interest Ra	
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201		2012	59,525,159	60,887,612	102.3%	36,403	75,869,762	77,606,323	102.3%							4.51%	1.2746
2015 2017-2018 2017-2018 15-14		I .															
Property 194 747 739 84-88 750 745		2015	59,016,364	82,859,304	140.4%	33,015	65,897,217	92,520,059	140.4%							4.51%	1.1166
Processor 1999		I .				· .											
Hardener C 2020 67 (1) 2016 10 10 27 10 11 10 11 10 11 10 11 10 11 11 11 11		2018	60,735,662	94,618,935	155.8%	28,948	59,410,724	92,554,839	155.8%		1					4.51%	0.9782
2007 55 FT-606 16,555-61 20-740 24-365 25,714 24-365 25,714 24-365 25,714 24-365	l l	I .									1						
2022 34,056,122 110,27,122 22,25% 21,260 34,57,102 05,600 34,57% 05,000 34,57% 0	Expenence	I .															
2002 10,000,919 11/22/13/20 216-66 13/76/16 15/76/20 15/80/20 16/80/20		I .				· ·					1						
2003 S. 19.04.87 11.27.0230 S. 15.69.M. 19.300 Z. 50.56.47 93.81.77 318.59. 1.4.600 No. 0.0721 No. 0.0201 No. 0.000 4.51% 0.718. 1.4.600 No. 0.0721 No. 0.0721 No. 0.000 4.51% 0.718. 1.4.600 No. 0.0721 No. 0.07		I .				· ·					1						
2007 20.451-302		2025	35,716,887	112,710,280		· ·	25,656,047	80,961,710	315.6%	1.4490	1			0.928	0.900	4.51%	0.7183
2002 22,187,2010 10,787,670 48,197.8 14,243 18,945,577 6807,570 48,197.8 14,240 NA		I .				· ·					1						
2000		2028	25,182,090	109,765,590	435.9%	14,303	15,846,537	69,073,079	435.9%	1.4490	N/A	0.0839	N/A	0.916	0.885	4.51%	0.6293
2031 16,800,464 0,907,777 501,76. 10,700 7,804,707 60,948,877 501,76. 1,4400 NA		I .				· ·											
2003 12,018,182 20,018,000 20,018,00		2031	16,860,840	99,675,772	591.2%	10,700	9,294,976	54,948,857	591.2%	1.4490	N/A	0.0965	N/A	0.903	0.870	4.51%	0.5513
2034 10.7873.572 78.0586 46.29% 7.0596 5.1577.410 40.5091.475 78.84% 78.0510 78.0587		I .				· ·											
2009 7,260,261 7,240,002 94,576 5,071 3,373,370 31,897,583 94,676 1,4490 NA 0,1194 NA 0,576 0,837 4,576 0,432 1,4490 NA 0,1214 NA 0,576 0,837 4,576 0,442 1,4490 NA 0,1214 NA 0,576 0,837 4,576 0,442 1,4490 NA 0,1228 NA 0,1228 NA 0,1214		I .				·					1						
2037 6,386,684 66,586,489 1032.7% 5,200 2,702.075 27,904.962 1032.7% 1,4690 NA 0,1241 NA 0,576 0,837 0,332 4,57% 0,0231		I .				· ·					1						
2009 4,986,97 55,771,124 122,576 3,947 1,689,856 20,878,975 122,576 1,4400 NA		I				, ,					1						
2040		I .				· .					1						1
2041 2,236,697 42,289,895 142,289,895 144,28% 2,913 1,041,596 15,026,194 144,00 NA 0,1432 NA 0,852 0,816 4,51% 0,3394 0,4304 1,131,3695 32,257,244 1695,7% 2,101 62,1334 10,473,748 1685,7% 1,4460 NA 0,1631 NA 0,847 0,604 4,51% 0,3294 0,4304 1,120,004 2,778,222 1815,7% 2,101 62,1334 10,473,748 1685,7% 1,4460 NA 0,1631 NA 0,847 0,604 4,51% 0,3294 0,4304 1,220,004 2,778,232 1815,7% 2,101 62,1334 10,473,748 1685,7% 1,4460 NA 0,1631 NA 0,847 0,604 4,51% 0,3294 0,4304 1,220 1,4304 NA 0,4304 NA 0,43		I .				·					1						1
2044 1.515,995 32,227,244 1865,7% 2.101 621,334 10,472,745 18,148,1 10,472,745 14,4490 N/A 0.1553 N/A 0.847 0.894 4.55% 0.3247 14,440 12,440 14,440 1		2041	2,936,957	42,369,965	1442.6%	2,913	1,041,569	15,026,184	1442.6%	1.4490	N/A	0.1434		0.857	0.815	4.51%	0.3546
2044 1.520,046 27,783,252 1815,7% 1.770 475,048 8.625,651 1952,86 1.4890 N/A 0.1679 N/A 0.942 0.789 4.5154 0.3107 0.465 0.46		l l				· I					1						
2046 957/013 20,042/086 20942% 1,233 272,219 5,700,914 2094.2% 1,4480 N/A 0,1727 N/A 0,832 0,789 4,51% 0,2245 1,244 1,445 1,346 1,34		2044	1,529,046	27,763,252	1815.7%	1,770	475,048	8,625,561	1815.7%	1.4490	N/A	0.1579	N/A	0.842	0.799	4.51%	0.3107
2041 749,783 16,802,131 2240,9% 1,020 224,070 240,9% 1,4490 NA 0,1723 NA 0,828 0,783 4,51% 0,2272 2404 583,718 13,968,529 2339,30% 440 152,016 3,837,779 2303,0% 14,4490 NA 0,1712 NA 0,823 0,779 4,51% 0,2269 2404 451,738 11,511,968 2548,4% 687 112,568 2,868,653 2548,4% 1,4490 NA 0,1818 NA 0,818 0,774 4,51% 0,2485 2404 2405 2405 2405 2405 2405 2405 240		I .				· .					1						1
2049		I .				· .					1					4.51%	0.2722
2050 347,673 94,08,085 2704,7% 559 82,897 2242,160 270,7% 1.4490 N/A 0.1863 N/A 0.0814 0.770 4.51% 0.2881 2.065 2.066,199 1.782,079 2.062,7% 1.4490 N/A 0.1908 N/A 0.090 0.766 4.51% 0.2881 2.065 2.065 1.61,490 4.896,940 3175,3% 2.29 32,07 1.022,683 3175,3% 2.2081 2.065 1.6636 3.367,4074 3321,5% 2.33 2.3311 774,295 3.221,5% 1.4490 N/A 0.2017 N/A 0.798 0.756 4.51% 0.2088 0.066		I .				I											
2005		I .				I											
2053		I .									1						
2054 116,638 3,874,074 3221,5% 223 23,311 774,296 3321,5% 1,4490 N/A 0,2017 N/A 0,798 0,756 4,51% 0,1996 2055 87,985 3,048,184 344,147 12,122 434,142 3581,3% 1,4490 N/A 0,2079 N/A 0,795 0,754 4,51% 0,133 2,057 4,805 1,447,559 378,29 1,447,659 378,81% 91 6,271 237,542 3788,1% 1,4490 N/A 0,2133 N/A 0,787 0,752 4,51% 0,1575 2,058 3,7429 1,447,659 3788,1% 91 6,271 237,542 3788,1% 1,4490 N/A 0,2133 N/A 0,787 0,752 4,51% 0,1575 2,058 3,7429 1,447,659 3788,1% 91 6,271 237,542 3788,1% 1,4490 N/A 0,2179 N/A 0,787 0,752 4,51% 0,1675 2,059 2,0163 1,098,221 3864,1% 71 4,515 174,448 3864,1% 1,4490 N/A 0,2179 N/A 0,782 0,752 4,51% 0,1675 2,056 1,248 383,073 3820,7% 56 3,259 4,2594 393,07% 1,4490 N/A 0,2189 N/A 0,781 0,752 4,51% 0,1534 2,064 2,299 481,282 3913,2% 34 1,277 6,759 3913,2% 1,4490 N/A 0,2219 N/A 0,778 0,764 4,51% 0,1404 2,064 2,299 4,164 2,294 2,405 2,294		I															
2056 66,247 2,372,513 3581,3% 147 12,122 434,42 3581,3% 14490 N/A 0,2079 N/A 0,792 0,753 4,51% 0,1832 2059 49,805 1,839,570 3693,6% 115 8,720 378,1% 14,4400 N/A 0,2133 N/A 0,787 0,752 4,51% 0,1675 2058 374,29 1,417,859 3788,1% 91 6,271 237,542 3788,1% 1,4490 N/A 0,2129 N/A 0,787 0,752 4,51% 0,1676 2059 28,163 1,088,213 3864,1% 71 4,451 174,448 3864,1% 1,4490 N/A 0,2129 N/A 0,787 0,752 4,51% 0,1676 2050 2050 21,248 833,073 39,207% 56 3,259 127,783 39,07% 1,4490 N/A 0,2189 N/A 0,781 0,784 4,51% 0,1534 2051 16,107 633,589 3933,6% 43 2,364 92,991 3933,6% 1,4490 N/A 0,2180 N/A 0,782 0,758 4,51% 0,1466 2062 12,299 481,282 3913,2% 34 1,727 67,589 3813,2% 1,4490 N/A 0,2180 N/A 0,778 0,776 4,51% 0,1466 2063 9,494 364,542 3839,6% 26 1,276 48,865 3839,6% 1,4490 N/A 0,2287 N/A 0,771 0,772 4,51% 0,1534 2064 7,425 2,764,50 3723,0% 20 955 35,545 3723,0% N/A 0,2224 N/A 0,778 0,782 4,51% 0,1234 2065 5,902 209,376 3547,4% 16 7,26 25,759 3547,4% 1,4490 N/A 0,2224 N/A 0,778 0,782 4,51% 0,1234 2066 4,786 158,175 3304,6% 12 563 18,820 304,6% 1,4490 N/A 0,2224 N/A 0,778 0,796 4,51% 0,1234 2066 3,363 9,066 158,175 3304,6% 12 563 18,820 304,6% 1,4490 N/A 0,2224 N/A 0,778 0,796 4,51% 0,1234 2066 3,363 9,066 2703,7% 7 361 8,971 2703,7% 1,4490 N/A 0,2184 N/A 0,778 0,786 4,51% 0,1126 2068 3,363 9,066 2703,7% 7 361 9,771 2703,7% 1,4490 N/A 0,2184 N/A 0,778 0,884 4,51% 0,1126 2068 3,363 9,066 5,1782 2018,2% 5 253 5,110 2,112,2% 1,4490 N/A 0,2164 N/A 0,782 0,886 4,51% 0,1034 2070 2,566 5,1782 2018,2% 5 253 5,110 2,112,2% 1,4490 N/A 0,2164 N/A 0,776 0,884 4,51% 0,1034 2070 2,566 5,1782 2018,2% 5 253 5,110 2,112,2% 1,4490 N/A 0,2164 N/A 0,776 0,884 4,51% 0,1034 2070 2,566 5,1782 2018,2% 5 253 5,110 2,112,2% 1,4490 N/A 0,2164 N/A 0,785 0,886 4,51% 0,1034 2070 2,566 5,1782 2018,2% 5 253 5,110 2,112,2% 1,4490 N/A 0,2164 N/A 0,785 0,886 4,51% 0,0094 2071 2,310 39,722 1719,6% 4 218 3,750 1719,6% 1,4490 N/A 0,2164 N/A 0,785 0,886 4,51% 0,0094 2071 2,310 39,722 1719,6% 4 218 3,750 1719,6% 1,4490 N/A 0,2168 N/A 0,2168 N/A 0,280 0,990 4,51% 0,0094 2071		2054	116,636	3,874,074	3321.5%	233	23,311	774,295	3321.5%	1.4490	N/A	0.2017	N/A	0.798	0.756	4.51%	0.1999
2007		I .															l .
2059 28,163 1,088,221 3864.1% 71 4,515 174,448 3864.1% 1,4490 N/A 0,2179 N/A 0,782 0,752 4,51% 0,1602 2060 21,248 8,833,073 3920.7% 5 6 3,259 12,783 3920.7% 1,4490 N/A 0,2189 N/A 0,781 0,754 4,51% 0,1532 2061 16,107 633,589 3933.6% 43 2,364 92,991 3933.6% 1,4490 N/A 0,2180 N/A 0,782 0,758 4,51% 0,1468 2062 12,299 451,822 3913.2% 34 1,727 67,589 3913.2% 1,4490 N/A 0,2221 N/A 0,778 0,764 4,51% 0,1468 2063 9,494 364,542 3839.6% 26 1,276 48,985 3839,6% 1,4490 N/A 0,2221 N/A 0,778 0,764 4,51% 0,1404 2063 9,494 364,542 3839.6% 20 955 35,545 3723.0% 1,4490 N/A 0,2287 N/A 0,771 0,772 4,51% 0,1344 2064 7,425 276,450 3723.0% 20 955 35,545 3723.0% 1,4490 N/A 0,2224 N/A 0,778 0,782 4,51% 0,1286 2065 5,902 29,376 3547.4% 16 726 25,759 3547.4% 1,4490 N/A 0,2224 N/A 0,778 0,785 4,51% 0,1286 2066 4,786 158,175 3904.6% 12,663 18,620 3004.6% 1,4490 N/A 0,2224 N/A 0,778 0,815 4,51% 0,1177 2,2067 3,964 118,832 2997.9% 10 446 13,835 2997.9% 1,4490 N/A 0,2242 N/A 0,776 0,811 4,51% 0,1177 2,2067 3,964 118,832 2997.9% 10 446 13,835 2997.9% 1,4490 N/A 0,2242 N/A 0,776 0,811 4,51% 0,1177 2,2067 3,964 18,832 2907.9% 1,4490 N/A 0,2184 N/A 0,782 0,828 4,51% 0,1172 2,068 3,353 90,683 2703.7% 7 361 9,771 2,703.7% 1,4490 N/A 0,2248 N/A 0,776 0,814 4,51% 0,1076 2,666 1,782 2,018,2% 5 2,53 5,110 2,018,2% 1,4490 N/A 0,2164 N/A 0,785 0,865 4,51% 0,1076 2,666 5,1782 2,018,2% 5 2,53 5,110 2,018,2% 1,4490 N/A 0,2164 N/A 0,785 0,865 4,51% 0,1076 2,011 2,310 39,722 1719,67% 4 2,18 3,750 1719,67% 1,4490 N/A 0,2164 N/A 0,785 0,865 4,51% 0,1094 2,000 2,0		2057	49,805	1,839,570	3693.6%	115	8,720	322,093	3693.6%	1.4490	N/A	0.2133	N/A	0.787	0.752	4.51%	0.1751
2060 21,248 833,073 3920,7% 56 3,259 127,783 3920,7% 1,4490 N/A 0,2189 N/A 0,781 0,754 4,51% 0,1534		I .															
2062 12,299 481,282 3913,2% 34 1,727 67,589 3913,2% 1,4490 N/A 0,2221 N/A 0,776 0,764 4,51% 0,1404 2063 9,494 364,542 3839,6% 26 1,276 48,985 3839,6% 1,4490 N/A 0,2287 N/A 0,775 0,762 4,51% 0,1344 2064 7,425 276,450 3723,0% 20 955 35,545 3723,0% 1,4490 N/A 0,2247 N/A 0,775 0,762 4,51% 0,1236 2065 5,902 20,9,376 3547,4% 16 726 25,759 3547,4% 1,4490 N/A 0,2224 N/A 0,776 0,811 4,51% 0,1237 2066 4,786 158,175 3304,6% 12 563 318,620 3304,6% 1,4490 N/A 0,2224 N/A 0,776 0,811 4,51% 0,1127 2067 3,964 118,832 2997,9% 10 446 13,385 2997,9% 1,4490 N/A 0,2242 N/A 0,775 0,846 4,51% 0,1126 2068 3,353 90,663 2703,7% 7 361 9,771 2703,7% 1,4490 N/A 0,2248 N/A 0,775 0,846 4,51% 0,1126 2069 2,901 68,411 2358,0% 6 299 7,055 2358,0% 1,4490 N/A 0,2248 N/A 0,775 0,846 4,51% 0,1031 2070 2,566 51,782 2018,2% 5 253 5,110 2018,2% 1,4490 N/A 0,2154 N/A 0,785 0,865 4,51% 0,1031 2070 2,566 51,782 2018,2% 5 253 5,110 2018,2% 1,4490 N/A 0,2107 N/A 0,788 0,900 4,51% 0,0987 2071 2,310 39,722 1719,6% 4 218 3,750 1719,6% 1,4490 N/A 0,2123 N/A 0,788 0,900 4,51% 0,0987 2071 2,310 39,722 1719,6% 4 218 3,750 1719,6% 1,4490 N/A 0,2123 N/A 0,788 0,900 4,51% 0,0987 2073 1,963 23,019 1172,8% 2 170 1,990 1172,8% 1,4490 N/A 0,2168 N/A 0,783 0,915 4,51% 0,0962 2073 1,963 23,019 1172,8% 2 170 1,990 1172,8% 1,4490 N/A 0,2168 N/A 0,783 0,915 4,51% 0,0962 2073 1,963 23,019 1172,8% 2 170 1,990 1172,8% 1,4490 N/A 0,1036 N/A 0,		2060	21,248	833,073	3920.7%	56	3,259	127,783	3920.7%	1.4490	N/A	0.2189	N/A	0.781	0.754	4.51%	0.1534
2063 9,494 364,542 3839,6% 26 1,276 48,985 3839,6% 1,4490 N/A 0,2287 N/A 0,771 0,772 4,51% 0,1344 2064 7,425 276,450 3723,0% 20 955 35,545 3723,0% 1,4490 N/A 0,2247 N/A 0,775 0,782 4,51% 0,1286 2065 5,902 209,376 3547,4% 16 726 25,759 3547,4% 1,4490 N/A 0,2224 N/A 0,776 0,811 4,51% 0,1230 2066 4,786 158,175 3304,6% 12 563 18,620 3304,6% 1,4490 N/A 0,2242 N/A 0,776 0,811 4,51% 0,1175 2067 3,964 118,832 2997,9% 10 446 13,385 2997,9% 1,4490 N/A 0,2184 N/A 0,776 0,811 4,51% 0,1175 2068 3,353 90,663 2703,7% 7 361 9,771 2703,7% 1,4490 N/A 0,2248 N/A 0,775 0,846 4,51% 0,1126 2068 3,353 90,663 2703,7% 7 361 9,771 2703,7% 1,4490 N/A 0,2248 N/A 0,775 0,846 4,51% 0,1057 2069 2,901 68,411 2358,0% 6 299 7,055 2358,0% 1,4490 N/A 0,2184 N/A 0,785 0,865 4,51% 0,1037 2070 2,566 51,782 2018,2% 5 253 5,110 2018,2% 1,4490 N/A 0,2154 N/A 0,785 0,865 4,51% 0,0987 2071 2,310 39,722 1719,6% 4 218 3,750 1719,6% 1,4490 N/A 0,2123 N/A 0,788 0,884 4,51% 0,0987 2071 2,310 39,722 1719,6% 4 218 3,750 1719,6% 1,4490 N/A 0,2123 N/A 0,788 0,900 4,51% 0,0982 2073 1,963 23,019 1172,8% 2 170 1,990 1172,8% 1,4490 N/A 0,2167 N/A 0,783 0,915 4,51% 0,0982 2073 1,963 23,019 1172,8% 2 170 1,990 1172,8% 1,4490 N/A 0,2167 N/A 0,783 0,915 4,51% 0,0982 2073 1,963 23,019 1172,8% 2 170 1,990 1172,8% 1,4490 N/A 0,1986 N/A 0,801 0,928 4,51% 0,0864 2074 1,842 17,320 940,0% 2 152 1,433 940,0% 1,4490 N/A 0,1986 N/A 0,801 0,928 4,51% 0,0864 2074 1,842 17,320 940,0% 2 152 1,433 940,0% 1,4490 N/A 0,1751 N/A 0,825 0,947 4,51% 0,0975 2076 1,662 9,477 570,3% 1 126 718 570,3% 1,4490 N/A 0,1751 N/A 0,825 0,947 4,51% 0,0757 2078-2098 14,500 16,869 116,36% 1 115 495 428.9% 1,4490 N/A		I .				I											l .
2064 7,425 276,450 3723.0% 20 955 35,545 3723.0% 1,4490 N/A 0,2247 N/A 0,775 0,782 4,51% 0,1286 2065 5,902 209,376 3547.4% 16 726 25,759 3547.4% 1,4490 N/A 0,2224 N/A 0,778 0,795 4,51% 0,1230 2066 4,786 158,175 3304.6% 12 563 18,620 3304.6% 1,4490 N/A 0,2242 N/A 0,776 0,811 4,51% 0,1177 2067 3,964 118,832 299,9% 10 446 13,385 299,9% 1,4490 N/A 0,2184 N/A 0,782 0,828 4,51% 0,1126 2068 3,353 90,663 2703.7% 7 361 9,771 2703.7% 1,4490 N/A 0,2248 N/A 0,775 0,846 4,51% 0,1075 2069 2,901 68,411 258.0% 6 299 7,055 2358.0% 1,4490 N/A 0,2154 N/A 0,785 0,865 4,51% 0,1031 2070 2,566 51,782 2018,2% 5 253 5,110 2018,2% 1,4490 N/A 0,2164 N/A 0,789 0,884 4,51% 0,0987 2071 2,310 39,722 1719,6% 4 218 3,750 1719,6% 1,4490 N/A 0,2107 N/A 0,789 0,884 4,51% 0,0987 2071 2,310 39,722 1719,6% 4 218 3,750 1719,6% 1,4490 N/A 0,2167 N/A 0,788 0,900 4,51% 0,0987 2073 1,963 23,019 1172,8% 2 170 1,990 1172,8% 1,4490 N/A 0,2167 N/A 0,783 0,915 4,51% 0,0962 2073 1,963 23,019 1172,8% 2 170 1,990 1172,8% 1,4490 N/A 0,2167 N/A 0,783 0,915 4,51% 0,0962 2073 1,963 23,019 1172,8% 2 152 1,433 940.0% 1,4490 N/A 0,1966 N/A 0,801 0,928 4,51% 0,0864 2074 1,842 17,320 940.0% 2 152 1,433 940.0% 1,4490 N/A 0,1966 N/A 0,801 0,928 4,51% 0,0862 2074 1,842 17,320 940.0% 2 152 1,433 940.0% 1,4490 N/A 0,1966 N/A 0,801 0,928 4,51% 0,0867 2076 1,662 9,477 570,3% 1 138 1,031 746,9% 1,4490 N/A 0,1966 N/A 0,801 0,928 4,51% 0,0827 2075 1,744 13,027 746,9% 1 138 1,031 746,9% 1,4490 N/A 0,1751 N/A 0,825 0,947 4,51% 0,0827 2078 2098 14,500 16,669 186,30 116,30 1 1,005 1,170 116,3% 1,4490 N/A 0,1966 N/A 0,801 0,953 4,51% 0,0857 2077 1,591 6,625 428,9% 1 115 495 428,9% 1,4490 N/A N/A N/A N/A N/A N/A N/A N/A N/A 1,51% 0,0757 2078-2098 14,500 16,669 186,30 16,662 3,477 570,3% 1 115 495 428,9% 1,4490 N/A N/A N/A N/A N/A N/A N/A N/A N/A 1,51% 0,0857 2078-2098 14,500 16,669 186,30 16,662 3,477 570,3% 1 115 495 428,9% 1,4490 N/A		I .															1
2066		I															
2067 3,964 118,832 2997.9% 10 446 13,385 2997.9% 1.4490 N/A 0.2184 N/A 0.782 0.828 4.51% 0.1126 2068 3,353 90,663 2703.7% 7 361 9,771 2703.7% 1.4490 N/A 0.2248 N/A 0.775 0.846 4.51% 0.1076 2069 2,901 68,411 2358.0% 6 299 7,055 2358.0% 1.4490 N/A 0.2154 N/A 0.785 0.865 4.51% 0.1031 2070 2,566 51,782 2018.2% 5 253 5,110 2018.2% 1.4490 N/A 0.2107 N/A 0.789 0.884 4.51% 0.0987 2071 2,310 39,722 1719.6% 4 218 3,750 1719.6% 1.4490 N/A 0.2107 N/A 0.788 0.900 4.51% 0.0944 2072 2,114 29,912 1415.0% 3 191 2,702 1415.0% 1.4490 N/A 0.2167 N/A 0.783 0.915 4.51% 0.0984 2073 1,963 23,019 1172.8% 2 0170 1,990 1172.8% 1.4490 N/A 0.1986 N/A 0.801 0.928 4.51% 0.0864 2074 1,842 17,320 940.0% 2 152 1,433 940.0% 1.4490 N/A 0.1986 N/A 0.801 0.928 4.51% 0.0827 2075 1,744 13,027 746.9% 1 0138 1,031 746.9% 1.4490 N/A 0.1751 N/A 0.825 0.947 4.51% 0.0827 2076 1,662 9,477 570.3% 1 126 718 570.3% 1.4490 N/A 0.1986 N/A 0.801 0.953 4.51% 0.0757 2077 1,591 6,825 428.9% 1 0115 495 428.9% 1.4490 N/A 0.1986 N/A 0.801 0.953 4.51% 0.0757 2078-2098 14,500 16,869 116.3% 1 0105 1,170 116.3% 1.4490 N/A N/A N/A N/A N/A N/A N/A 4.51% 0.0693 Past 1,133,724,822 857,908,350 75.7% 734,765 1,783,114,430 1,154,508,377 64.7% Future 628,228,149 2,408,287,602 383.3% 344,017 468,584,254 1,482,708,367 316.4%		I .															
2069 2,901 68,411 2358.0% 6 299 7,055 2358.0% 1.4490 N/A 0.2154 N/A 0.785 0.865 4.51% 0.1031 2070 2,566 51,782 2018.2% 5 253 5,110 2018.2% 1.4490 N/A 0.2107 N/A 0.789 0.884 4.51% 0.0987 2071 2,310 39,722 1719.6% 4 218 3,750 1719.6% 1.4490 N/A 0.2123 N/A 0.788 0.900 4.51% 0.0942 2072 2,114 29,912 1415.0% 3 191 2,702 1415.0% 1.4490 N/A 0.2167 N/A 0.783 0.915 4.51% 0.9063 2073 1,963 23,019 1172.8% 2 170 1,990 1172.8% 1.4490 N/A 0.1986 N/A 0.801 0.928 4.51% 0.0864 2074 1,842 17,320 940.0% 2 152 1,433 940.0% 1.4490 N/A 0.2168 N/A 0.783 0.939 4.51% 0.0864 2074 1,842 17,320 940.0% 2 152 1,433 940.0% 1.4490 N/A 0.2168 N/A 0.783 0.939 4.51% 0.0867 2075 1,744 13,027 746.9% 1 138 1,031 746.9% 1.4490 N/A 0.1751 N/A 0.825 0.947 4.51% 0.0857 2076 1,662 9,477 570.3% 1 126 7718 570.3% 1.4490 N/A 0.1986 N/A 0.801 0.953 4.51% 0.0757 2077 1,591 6,825 428.9% 1 1155 495 428.9% 1.4490 N/A 0.1986 N/A 0.801 0.953 4.51% 0.0755 2078-2098 14,500 16,869 116.3% 1 1,005 1,170 116.3% 1.4490 N/A		2067	3,964	118,832	2997.9%	1	446	13,385	2997.9%	1.4490	N/A	0.2184	N/A	0.782	0.828	4.51%	0.1126
2070		I .				7 6											l .
2072		2070	2,566	51,782	2018.2%	5	253	5,110	2018.2%	1.4490	N/A	0.2107	N/A	0.789	0.884	4.51%	0.0987
2073		I				4 3											
2075		2073	1,963	23,019	1172.8%	2		1,990	1172.8%	1.4490	1	0.1986		0.801		4.51%	0.0864
2076		I .				2					1						
2077 1,591 6,825 428.9% 1 115 495 428.9% 1.4490 N/A		I				1											
Past 1,133,724,822 857,908,350 75.7% 734,765 1,783,114,430 1,154,508,377 64.7% Future 628,228,149 2,408,287,602 383.3% 344,017 468,584,254 1,482,708,367 316.4%		2077	1,591			1	115		428.9%	1.4490		N/A		N/A	N/A	4.51%	
Future 628,228,149 2,408,287,602 383.3% 344,017 468,584,254 1,482,708,367 316.4%	}	2078-2098	14,500	16,869	110.3%	1	1,005	1,170	116.3%	1.4490	N/A	N/A	N/A	N/A	N/A	4.51%	0.0693
	ı	l l															
	l l	l l															

Note:

⁻ This exhibit normalizes the premium from all states to reflect the prior rate action authorized by Maryland rather than the prior rate action authorized by other states.

<sup>There were three prior authorized increases for a cumulative total of approximately 44.90%.
The projections are based on the assumptions derived using experience data through 6/30/2017.</sup>

Exhibit I-A Metropolitan Life Insurance Company Nationwide Experience Projections (Premium Normalized to Include Prior Authorized Increases) and With 15.00% Future Increase Policy Forms: LTC.02, LTC.03 and LTC.04

		187	ithout Interest	Loss	Ratio Demonstra		With Interest		Fact Premium	ors Derived fr	rom Projected Values	for Illustrativ		Only	Interest Ra Calendar Year	te Factors Mid-Year
	Calendar	Earned	Incurred	Loss	Life	Earned	Incurred	Loss	Rate Increase	Benefit	Policy	Policy	Policy	Premium	Effective	Disc / Accu
	Year 1991	Premium 236,752	Claims -	Ratio 0.0%	Years 318	Premium 762,037	Claims -	Ratio 0.0%	Factor	Downgrade	Lapse & Mortality	Shock Lapse	Persistency	Persistency	Int Rate 4.51%	Factor 3.21
	1992 1993	1,001,528 1,836,721	12,795 88,383	1.3% 4.8%	693 1,217	3,084,525 5,412,656	39,406 260,458	1.3% 4.8%							4.51% 4.51%	
	1994	2,576,020	630,822	24.5%	1,778	7,263,711	1,778,754	24.5%							4.51%	2.81
	1995 1996	4,000,511 8,028,467	355,644 1,479,819	8.9% 18.4%	3,527 6,611	10,793,618 20,726,519	959,548 3,820,342	8.9% 18.4%							4.51% 4.51%	
	1997	11,468,941	1,826,216	15.9%	7,787	28,330,823	4,511,157	15.9%							4.51%	2.47
	1998 1999	16,887,682 28,570,510	2,710,864 5,905,951	16.1% 20.7%	11,882 20,137	39,916,098 64,615,718	6,407,458 13,357,034	16.1% 20.7%							4.51% 4.51%	
	2000	38,527,352	7,405,276	19.2%	31,662	83,374,165	16,025,205	19.2%							4.51%	
	2001	48,864,876	9,570,375	19.6%	37,340	101,181,540	19,816,795	19.6%							4.51%	
	2002 2003	55,785,945 61,686,649	13,959,089 17,919,043	25.0% 29.0%	40,621 43,992	110,527,777 116,944,546	27,656,914 33,970,630	25.0% 29.0%							4.51% 4.51%	
	2004	64,809,682	23,294,582	35.9%	43,706	117,563,047	42,255,756	35.9%							4.51%	1.81
torical erience	2005 2006	64,016,577 63,346,011	33,631,116 29,298,106	52.5% 46.3%	42,813 41,973	111,113,172 105,204,550	58,373,318 48,658,060	52.5% 46.3%							4.51% 4.51%	
	2007	62,994,681	35,823,680	56.9%	41,116	100,106,271	56,928,219	56.9%							4.51%	1.5
	2008 2009	62,696,015 62,119,757	45,210,430 46,923,133	72.1% 75.5%	40,259 39,577	95,332,173 90,379,816	68,744,536 68,269,812	72.1% 75.5%							4.51% 4.51%	1
	2010	61,366,092	51,237,723	83.5%	38,613	85,430,377	71,330,239	83.5%							4.51%	1.3
	2011 2012	59,402,016 59,525,159	53,047,819 60,887,612	89.3% 102.3%	37,587 36,403	79,127,454 75,869,762	70,663,240 77,606,323	89.3% 102.3%							4.51% 4.51%	
	2013	63,376,539	71,261,820	112.4%	35,545	77,292,764	86,909,494	112.4%							4.51%	1.2
	2014 2015	61,409,394 59,016,364	76,044,062 82,859,304	123.8% 140.4%	34,297 33,015	71,661,729 65,897,217	88,739,662 92,520,059	123.8% 140.4%							4.51% 4.51%	
	2016	55,757,532	91,561,658	164.2%	31,781	59,571,744	97,825,127	164.2%							4.51%	1.0
ioctod	2017	54,417,050	94,963,030	174.5%	30,515	55,630,622	97,080,832	174.5%	1 31/10	1.0000	0.0513	1.0000	0.040	N/A	4.51% 4.51%	
ected Iture	2018 2019	60,735,662 57,990,968	94,618,935 98,928,016	155.8% 170.6%	28,948 27,419	59,410,724 54,277,969	92,554,839 92,593,932	155.8% 170.6%		1.0000		1.0000				0.
rience	2020	57,626,390	102,614,648	178.1%	25,798	51,609,161	91,899,837	178.1%	1.4588	0.9997	0.0591	0.9991	0.941	0.923	4.51%	0.
	2021 2022	58,211,025 54,435,624	104,473,592 106,727,305	179.5% 196.1%	23,943 22,407	49,883,025 44,634,728	89,527,005 87,511,520	179.5% 196.1%	1.6241 1.6664	0.9968 0.9960	0.0719 0.0642	0.9892 0.9866				1
	2023	49,529,173	108,753,538	219.6%	20,955	38,859,116	85,324,791	219.6%	1.6664	0.9960	0.0648	0.9866			1	0.
	2024 2025	44,829,057 40,361,926	110,088,782 110,755,163	245.6% 274.4%	19,521 18,114	33,653,760 28,992,658	82,645,090 79,557,316	245.6% 274.4%	1.6664 1.6664	0.9960 0.9960	0.0684 0.0721	0.9866 0.9866				1
	2026	36,126,128	110,605,587	306.2%	16,739	24,830,171	76,021,312	306.2%	1.6664	0.9960	0.0759	0.9866	0.924	0.895	4.51%	0.
	2027 2028	32,151,508 28,457,062	109,635,765 107,861,552	341.0% 379.0%	15,403 14,112	21,144,713 17,907,405	72,102,894 67,874,910	341.0% 379.0%	1.6664 1.6664	0.9960 0.9960	0.0798 0.0839	0.9866 0.9866			1	1
	2029	25,045,406	105,250,766	420.2%	12,871	15,080,399	63,373,839	420.2%	1.6664	0.9960	0.0880	0.9866	0.912	0.880	4.51%	0.
	2030 2031	21,910,561 19,053,620	101,940,626 97,946,757	465.3% 514.1%	11,684 10,556	12,623,518 10,503,803	58,731,920 53,995,692	465.3% 514.1%	1.6664 1.6664	0.9960 0.9960	0.0922 0.0965	0.9866 0.9866				
	2032	16,466,006	93,353,125	566.9%	9,491	8,685,593	49,242,497	566.9%	1.6664	0.9960	0.1010	0.9866	0.899	0.864	4.51%	0.
	2033 2034	14,141,276 12,067,977	88,267,085 82,730,700	624.2% 685.5%	8,490 7,556	7,137,432 5,828,140	44,550,455 39,954,179	624.2% 685.5%	1.6664 1.6664	0.9960 0.9960	0.1054 0.1100	0.9866 0.9866				1
	2035	10,232,874	76,901,236	751.5%	6,690	4,728,629	35,536,200	751.5%	1.6664	0.9960	0.1146	0.9866				
	2036 2037	8,621,493 7,217,283	70,888,927 64,812,391	822.2% 898.0%	5,891 5,160	3,812,082 3,053,484	31,344,274 27,420,793	822.2% 898.0%	1.6664 1.6664	0.9960 0.9960	0.1194 0.1241	0.9866 0.9866				1
	2038	6,002,233	58,784,257	979.4%	4,495	2,429,836	23,797,161	979.4%	1.6664	0.9960	0.1241	0.9866			1	1
	2039 2040	4,959,115 4,070,443	52,838,388 47,114,479	1065.5% 1157.5%	3,894 3,355	1,920,925 1,508,656	20,467,078 17,462,355	1065.5% 1157.5%	1.6664 1.6664	0.9960 0.9960	0.1337 0.1385	0.9866 0.9866			1	1
	2040	3,318,914	41,634,999	1254.5%	2,874	1,177,027	14,765,533	1254.5%	1.6664	0.9960	0.1363	0.9866			1	1
	2042 2043	2,687,988	36,489,714	1357.5%	2,448 2,073	912,137	12,382,353	1357.5%	1.6664 1.6664	0.9960 0.9960	0.1482	0.9866 0.9866			1	1
	2043	2,162,461 1,727,901	31,697,697 27,281,659	1465.8% 1578.9%	1,746	702,139 536,829	10,292,067 8,475,939	1465.8% 1578.9%	1.6664	0.9960	0.1531 0.1579	0.9866				1
	2045	1,371,522	23,289,296	1698.1%	1,461	407,720	6,923,338	1698.1%	1.6664	0.9960	0.1630	0.9866				
	2046 2047	1,081,474 847,294	19,694,439 16,510,675	1821.1% 1948.6%	1,216 1,007	307,622 230,610	5,602,024 4,493,744	1821.1% 1948.6%	1.6664 1.6664	0.9960 0.9960	0.1677 0.1723	0.9866 0.9866			1	1
	2048	659,632	13,726,226	2080.9%	828	171,786	3,574,677	2080.9%	1.6664	0.9960	0.1772	0.9866				1
	2049 2050	510,488 392,888	11,312,295 9,240,536	2216.0% 2351.9%	678 552	127,208 93,678	2,818,892 2,203,267	2216.0% 2351.9%	1.6664 1.6664	0.9960 0.9960	0.1818 0.1863	0.9866 0.9866				1
	2051	300,954	7,490,445	2488.9%	446	68,661	1,708,912	2488.9%	1.6664	0.9960	0.1908	0.9866	0.809	0.766	4.51%	0
	2052 2053	229,500 174,243	6,027,290 4,811,013	2626.3% 2761.1%	359 288	50,100 36,396	1,315,759 1,004,923	2626.3% 2761.1%	1.6664 1.6664	0.9960 0.9960	0.1946 0.1992	0.9866 0.9866				1
	2054	131,804	3,806,872	2888.3%	230	26,343	760,864	2888.3%	1.6664	0.9960	0.2017	0.9866	0.798	0.756	4.51%	0
	2055 2056	99,427 74,862	2,995,309 2,331,359	3012.6% 3114.2%	183 145	19,015 13,699	572,826 426,611	3012.6% 3114.2%	1.6664 1.6664	0.9960 0.9960	0.2047 0.2079	0.9866 0.9866				1
	2057	56,282	1,807,660	3211.8%	114	9,855	316,506	3211.8%	1.6664	0.9960	0.2133	0.9866	0.787	0.752	4.51%	0
	2058 2059	42,297 31,825	1,393,265 1,069,344	3294.0% 3360.1%	90 70	7,086 5,102	233,421 171,422	3294.0% 3360.1%	1.6664 1.6664	0.9960 0.9960	0.2129 0.2179	0.9866 0.9866				1
	2060	24,011	818,622	3409.3%	55	3,683	125,567	3409.3%	1.6664	0.9960	0.2179	0.9866				1
	2061	18,202	622,598	3420.5%	43	2,671	91,378	3420.5%	1.6664	0.9960	0.2180	0.9866				1
	2062 2063	13,899 10,729	472,933 358,219	3402.8% 3338.7%	33 26	1,952 1,442	66,416 48,136	3402.8% 3338.7%	1.6664 1.6664	0.9960 0.9960	0.2221 0.2287	0.9866 0.9866			1	1
	2064	8,391	271,654	3237.4%	20	1,079	34,928	3237.4%	1.6664	0.9960	0.2247	0.9866	0.775	0.782	4.51%	0
	2065 2066	6,670 5,409	205,744 155,431	3084.7% 2873.6%	15 12	821 637	25,312 18,297	3084.7% 2873.6%	1.6664 1.6664	0.9960 0.9960	0.2224 0.2242	0.9866 0.9866			1	1
	2067	4,479	116,771	2606.8%	9	505	13,153	2606.8%	1.6664	0.9960	0.2184	0.9866	0.782	0.828	4.51%	, o
	2068 2069	3,789 3,279	89,090 67,225	2351.0% 2050.4%	7 6	408 338	9,602 6,933	2351.0% 2050.4%	1.6664 1.6664	0.9960 0.9960	0.2248 0.2154	0.9866 0.9866				1
	2070	2,899	50,884	1754.9%	5	286	5,021	1754.9%	1.6664	0.9960	0.2107	0.9866	0.789	0.884	4.51%	0
	2071 2072	2,610 2,389	39,033 29,393	1495.3% 1230.4%	4	246 216	3,685 2,655	1495.3% 1230.4%	1.6664 1.6664	0.9960 0.9960	0.2123 0.2167	0.9866 0.9866				1
	2073	2,218	22,620	1019.8%	2	192	2,655 1,955	1019.8%	1.6664	0.9960	0.1986	0.9866			4.51%	, c
	2074	2,082	17,020	817.4%	2	172	1,408	817.4%	1.6664	0.9960	0.2168	0.9866	0.783	0.939	4.51%	0
	2075 2076	1,971 1,878	12,801 9,313	649.5% 495.9%	1 1	156 142	1,013 705	649.5% 495.9%	1.6664 1.6664	0.9960 0.9960	0.1751 0.1986	0.9866 0.9866				1
	2077	1,798	6,706	373.0%	1	130	486	373.0%	1.6664	0.9960	N/A	0.9866	N/A	N/A	4.51%	0.
	2078-2098	16,386	16,576	101.2%	1	1,136	1,149	101.2%	1.6664	0.9960	N/A	0.9866	N/A	. N/A	4.51%	0.
	Past	1,133,724,822	857,908,350	75.7%	734,765	1,783,114,430	1,154,508,377	64.7%								
	Future	686,277,658	2,371,884,344 3,229,792,694	345.6% 177.5%	340,547 1,075,312	507,435,151 2,290,549,581	1,461,990,769 2,616,499,146	288.1% 114.2%								

⁻ This exhibit normalizes the premium from all states to reflect the prior rate action authorized by Maryland rather than the prior rate action authorized by other states.

<sup>There were three prior authorized increases for a cumulative total of approximately 44.90%.
The current requested increase of 15.00% is assumed to be implemented starting 9/1/2020.</sup>

The current requested increase of 15.00% is assumed to be implemented starting 9/1/2020.
 The projections are based on the assumptions derived using experience data through 6/30/2017.

Exhibit II-A

Demonstration that Lifetime Incurred Claims with Requested Increase are Not Less than Lifetime Earned Premium with Prescribed Factors Policy Forms: LTC.02, LTC.03 and LTC.04

Accumulated value of initial earned premium	1,736,768,486	х	58% =	1,007,325,722
2a Accumulated value of earned premium 2b Accumulated value of prior premium rate schedule increases (2a-1)	1,783,114,430 46,345,944	x	85% =	39,394,053
3 Present value of future projected initial earned premium	330,320,130	x	58% =	191,585,676
4a Present value of future projected premium 4b Present value of future projected premium in excess of the projected initial earned premiums (4a-3)	507,435,151 177,115,020	x	85% =	150,547,767
5 Lifetime Earned Premium Times Prescribed Factor: Sum of 1, 2b, 3, and 4b				1,388,853,217
6a Accumulated value of incurred claims without the inclusion of active life reserves 6b Present value of future projected incurred claims without the inclusion of active life reserves				1,154,508,377 1,461,990,769
7 Lifetime Incurred Claims with Rate Increase: Sum of 6a and 6b				2,616,499,146
8 Test: 7 is not less than 5				TRUE

Exhibit I-B Metropolitan Life Insurance Company Maryland Experience Projections (Premium Normalized to Include Prior Authorized Increases) Policy Forms: LTC.02, LTC.03 and LTC.04

		147	ithout Interest	Loss I	Ratio Demonstra	tion	With Interest			tors Derived f	rom Projected Value		•	nly	Interest Ra	
	Calendar	Earned	Incurred	Loss	Life	Earned	Incurred	Loss	Premium Rate Increase	Benefit	Policy	Persistency F Policy	Policy	Premium	Calendar Year Effective	Mid-Year Disc / Accum
	Year 1991	Premium -	Claims -	Ratio N/A	Years -	Premium -	Claims -	Ratio N/A	Factor	Downgrade	Lapse & Mortality	Shock Lapse	Persistency	Persistency	Int Rate 4.51%	Factor 3.2187
	1992 1993	1,261 16,965	-	0.0% 0.0%	4 18	3,884 49,995	-	0.0% 0.0%							4.51% 4.51%	
	1994	44,414	-	0.0%	25	125,235	-	0.0%							4.51%	2.8197
	1995 1996	45,528 45,794	-	0.0% 0.0%	23 23	122,837 118,224	-	0.0% 0.0%							4.51% 4.51%	
	1997 1998	43,812 105,442	-	0.0% 0.0%	20 89	108,227 249,226	-	0.0% 0.0%							4.51% 4.51%	
	1999	371,260	-	0.0%	276	839,650	-	0.0%							4.51%	2.2616
	2000 2001	706,171 1,017,728	128,416 397,314	18.2% 39.0%	472 774	1,528,172 2,107,348	277,896 822,695	18.2% 39.0%							4.51% 4.51%	
Historical	2002 2003	1,235,409 1,480,878	137,260 16,773	11.1% 1.1%	862 1,003	2,447,695 2,807,424	271,951 31,797	11.1% 1.1%							4.51% 4.51%	
Experience	2004	1,594,274	760,323	47.7%	1,014	2,891,971	1,379,206	47.7%							4.51%	1.8140
	2005 2006	1,572,461 1,574,533	189,556 414,984	12.1% 26.4%	995 987	2,729,310 2,614,972	329,011 689,203	12.1% 26.4%							4.51% 4.51%	
	2007 2008	1,585,745 1,601,543	108,632 1,004,788	6.9% 62.7%	982 971	2,519,943 2,435,220	172,630 1,527,827	6.9% 62.7%							4.51% 4.51%	
	2009	1,609,311	671,188	41.7%	960	2,341,433	976,531	41.7%							4.51%	1.4549
	2010 2011	1,592,099 1,539,965	1,574,941 609,049	98.9% 39.5%	939 919	2,216,430 2,051,337	2,192,543 811,295	98.9% 39.5%							4.51% 4.51%	
	2012 2013	1,559,182 1,679,086	1,320,396 2,495,617	84.7% 148.6%	891 891	1,987,306 2,047,780	1,682,954 3,043,605	84.7% 148.6%							4.51% 4.51%	
	2014	1,647,255	1,707,507	103.7%	871	1,922,266	1,992,576	103.7%							4.51%	1.1670
	2015 2016	1,608,467 1,564,070	1,599,002 846,007	99.4% 54.1%	851 833	1,796,002 1,671,064	1,785,433 903,880	99.4% 54.1%							4.51% 4.51%	
Projected	2017 2018	1,562,568 1,658,341	2,323,774 2,286,851	148.7% 137.9%	808 771	1,597,415 1,622,164	2,375,597 2,236,963	148.7% 137.9%	1.3149	N/A	0.0462	N/A	0.954	0.961	4.51%	1.0223
Future	2019	1,596,933	2,443,949	153.0%	734	1,494,686	2,287,469	153.0%	1.3538	N/A	0.0474	N/A	0.953	0.935	4.51%	0.9360
Experience	2020 2021	1,586,183 1,476,232	2,594,735 2,732,572	163.6% 185.1%	695 656	1,420,557 1,265,034	2,323,798 2,341,635	163.6% 185.1%	1.4438 1.4490	N/A N/A				0.931 0.927		
	2022 2023	1,362,440 1,251,260	2,865,258 2,982,453	210.3% 238.4%	619 583	1,117,139 981,702	2,349,381 2,339,944	210.3% 238.4%	1.4490 1.4490	N/A N/A	0.0558	N/A	0.944	0.923 0.918	4.51%	0.8200
	2024	1,143,431	3,079,407	269.3%	547	858,389	2,311,751	269.3%	1.4490	N/A	0.0623	N/A	0.938	0.914	4.51%	0.7507
	2025 2026	1,039,664 939,957	3,159,285 3,213,851	303.9% 341.9%	511 475	746,808 646,050	2,269,368 2,208,941	303.9% 341.9%	1.4490 1.4490	N/A N/A				0.909 0.904		
	2027	845,249	3,243,042	383.7%	441	555,885	2,132,814	383.7%	1.4490	N/A	0.0731	N/A	0.927	0.899	4.51%	0.6577
	2028 2029	756,191 672,802	3,253,286 3,239,085	430.2% 481.4%	407 374	475,854 405,109	2,047,222 1,950,326	430.2% 481.4%	1.4490 1.4490	N/A	0.0809	N/A	0.919	0.895 0.890	4.51%	0.6021
	2030 2031	595,144 523,443	3,200,883 3,138,511	537.8% 599.6%	342 312	342,885 288,562	1,844,152 1,730,186	537.8% 599.6%	1.4490 1.4490	l				0.885 0.880	1	
	2032	457,701	3,050,165	666.4%	283	241,431	1,608,920	666.4%	1.4490	N/A	0.0932	N/A	0.907	0.874	4.51%	0.5275
	2033 2034	397,791 343,625	2,937,941 2,804,582	738.6% 816.2%	255 229	200,774 165,951	1,482,847 1,354,452	738.6% 816.2%	1.4490 1.4490	1				0.869 0.864		
	2035 2036	294,958 251,562	2,654,864 2,489,489	900.1% 989.6%	205 182	136,301 111,231	1,226,817 1,100,753	900.1% 989.6%	1.4490 1.4490	N/A N/A				0.858 0.853	1	
	2037	213,196	2,317,022	1086.8%	161	90,199	980,284	1086.8%	1.4490	N/A	0.1157	N/A	0.884	0.847	4.51%	0.4231
	2038 2039	179,490 150,039	2,142,376 1,954,068	1193.6% 1302.4%	142 124	72,661 58,118	867,281 756,913	1193.6% 1302.4%	1.4490 1.4490	N/A N/A				0.842 0.836		
	2040 2041	124,573 102,692	1,768,646 1,588,426	1419.8% 1546.8%	108 93	46,172 36,419	655,525 563,323	1419.8% 1546.8%	1.4490 1.4490	1				0.830 0.824		
	2042	84,012	1,409,993	1678.3%	80	28,508	478,465	1678.3%	1.4490	N/A	0.1403	N/A	0.860	0.818	4.51%	0.3393
	2043 2044	68,225 54,964	1,244,150 1,085,406	1823.6% 1974.8%	68 58	22,152 17,076	403,969 337,217	1823.6% 1974.8%	1.4490 1.4490	1				0.812 0.806	1	
	2045 2046	43,933 34,816	937,720 799,627	2134.4% 2296.7%	49 41	13,060 9,903	278,761 227,452	2134.4% 2296.7%	1.4490 1.4490	l				0.799 0.792		
	2047	27,363	672,263	2456.9%	34	7,447	182,971	2456.9%	1.4490	N/A	0.1662	N/A	0.834	0.786	4.51%	0.2722
	2048 2049	21,336 16,511	559,800 459,962	2623.8% 2785.9%	28 23	5,556 4,114	145,787 114,617	2623.8% 2785.9%	1.4490 1.4490	N/A N/A				0.780 0.774		
	2050 2051	12,667 9,640	375,572 303,413	2965.0% 3147.5%	19 16	3,020 2,199	89,549 69,222	2965.0% 3147.5%	1.4490 1.4490	l				0.767 0.761	1	
	2052	7,280	242,244	3327.3%	13	1,589	52,882	3327.3%	1.4490	N/A	0.1949	N/A	0.805	0.755	4.51%	0.2183
	2053 2054	5,451 4,046	192,271 150,218	3527.2% 3712.6%	10 8	1,139 809	40,161 30,024	3527.2% 3712.6%	1.4490 1.4490	N/A N/A				0.749 0.742		
	2055 2056	2,978 2,182	115,050 86,713	3863.8% 3974.7%	6	569 399	22,002 15,867	3863.8% 3974.7%	1.4490 1.4490	1				0.736 0.733	1	
	2057	1,589	65,215	4104.3%	4	278	11,419	4104.3%	1.4490	N/A	0.2196	N/A	0.780	0.728	4.51%	0.1751
	2058 2059	1,147 821	48,891 35,966	4264.0% 4378.7%	3 2	192 132	8,191 5,766	4264.0% 4378.7%	1.4490 1.4490	1				0.722 0.716	1	
	2060	585	26,426	4513.5%	2	90	4,053	4513.5%	1.4490	N/A	0.2204	N/A	0.780	0.713	4.51%	0.1534
	2061 2062	416 297	18,647 12,792	4486.5% 4313.9%	1	61 42	2,737 1,796	4486.5% 4313.9%	1.4490 1.4490	1				0.710 0.713	1	
	2063 2064	213 154	8,914 6,340	4182.1% 4112.0%	1	29 20	1,198 815	4182.1% 4112.0%	1.4490 1.4490	N/A N/A				N/A N/A	1	
	2065	112	4,882	4375.4%	1	14	601	4375.4%	1.4490	N/A	N/A	N/A	N/A	N/A	4.51%	0.1230
	2066 2067	81 58	3,846 2,916	4760.4% 5040.3%	0 0	10 7	453 328	4760.4% 5040.3%	1.4490 1.4490	N/A	N/A	N/A	N/A	N/A N/A	4.51%	0.1126
	2068 2069	41 29	2,254 1,755	5476.8% 6107.4%	0	4 2	243 181	5476.8% 6107.4%	1.4490 1.4490	l				N/A N/A	1	1
	2070	20	1,312	6607.4%	0	2	129	6607.4%	1.4490	N/A	N/A	N/A	N/A	N/A	4.51%	0.0987
	2071 2072	13 9	957 692	7126.7% 7443.5%	0 0	1 1	90 62	7126.7% 7443.5%	1.4490 1.4490	1				N/A N/A		
	2073 2074	6	510 375	7934.2% 8648.5%	0	1	44 31	7934.2% 8648.5%	1.4490 1.4490	N/A	N/A	N/A	N/A	N/A N/A	4.51%	0.0864
	2075	3	247	8973.1%	0	0	20	8973.1%	1.4490	N/A	N/A	N/A	N/A	N/A	4.51%	0.079
	2076 2077	2 1	154 81	9580.0% 10083.1%	0 0	0	12 6	9580.0% 10083.1%	1.4490 1.4490	N/A N/A				N/A N/A		
	2078-2098	0	41	8853.3%	0	0	3	8853.3%	1.4490	l				N/A	1	
	Past	27,405,222	16,305,528	59.5%	16,501	41,330,364	21,266,629	51.5%								
	Future Lifetime	18,363,902 45,769,124	74,018,361 90,323,889	403.1% 197.3%	9,725 26,226	13,498,510 54,828,875	43,498,190 64,764,820	322.2% 118.1%								
te:		10,100,124	50,020,003	101.0/0	20,220	0-7,020,013	0-7,7 0-7,020	1 10.1 /0	1							

⁻ The premiums shown in this exhibit reflect prior rate inreases authorized by Maryland.

<sup>There were three prior authorized increases for a cumulative total of approximately 44.90%.
The projections are based on the assumptions derived using experience data through 6/30/2017.</sup>

Exhibit I-B Metropolitan Life Insurance Company Maryland Experience Projections (Premium Normalized to Include Prior Authorized Increases) and With 15.00% Future Increase Policy Forms: LTC.02, LTC.03 and LTC.04

Calendar Earned Incurred Loss Life Earned Incurred Loss Rate Increase Benefit Policy Policy Premium Effective Disc /				Manual India	Loss R	tatio Demonstra		Milab Indian			tors Derived f	rom Projected Value			Only		ate Factors
140 1.5	-	Calendar			Loss	Life			Loss		Benefit	Policy			Premium	╡	Mid-Year Disc / Accum
190						Years				Factor	Downgrade	Lapse & Mortality	Shock Lapse	Persistency	Persistency		Factor 3.2187
1966 44-141		1992	1,261		0.0%	4	3,884		0.0%							4.51%	3.0798
180		I .	•				•	-								I .	
Here			•														
1886			·														
200 750,77		I .														I .	1
March 1967		I .	·					277.906									
Marcine 1906 146,248 16773 116,00 1606 2,000 1606 16744 1676 167		I .						•									l .
		I .		•				•	11.1%								
Handson 2003 1507-461 1502-200 12-15-15-15-15-15-15-15-15-15-15-15-15-15-		I .						•									
2007 1,566,748 108,462 108,462 108,462 2,576,643 172,467 146,464 126		2005	1,572,461	189,556	12.1%	995	2,729,310	329,011	12.1%							4.51%	1.7357
200	Experience	I .															
2010 10,000 10,		2008	1,601,543	1,004,788	62.7%	971	2,435,220	1,527,827	62.7%							4.51%	1.5205
201 150		I .						•								I .	
Power 1,000 1,00		2011	1,539,965	609,049	39.5%	919	2,051,337		39.5%							4.51%	1.3321
March 1,000 1,00		I .															l .
Proceeds																	
Property 1,000 1																	
### 2019 1,000,000 2,000		I .	, ,													I .	
Pipelareza 200	,	I .		2,286,851							1						
2027											1						
2023		2021	1,631,476	2,694,365	165.1%	649	1,398,067	2,308,894	165.1%	1.6241	0.9968	0.0663	0.9892	0.934	0.927	4.51%	0.8569
2022 1,174.07 202.08 234.2% 528 97.024 2271.00 234.2% 5.000 5.000 0.000		I .									1						1
2020 1,062_200 3,186_102 207_305 469 770_070 2,170_023 207_305 1,866 0,5900 0,0904 0,9800 0,931 0,364 4,576 2,272 2,276_2017 2,386_207 2,376_207 2		2024	1,292,137	3,025,990	234.2%	539	970,024	2,271,650	234.2%	1.6664	0.9960	0.0623	0.9866	0.938	0.914	4.51%	0.7507
2027 954,779 3,196,767 33,195,767 324,155 460 527,762 2015,617 332,155 50000 2017 0,00000 0,00000 0,00000 0,00000 0		I .									1					I .	
2022 780.051 3,145.059 441.07% 209 447.774 1791.0494 411.07% 1.0064 0.0500 0.050		I .									I						
2000 \$77,545 3,044,009 647,776 337 252,000 1,700,717 1,6664 0,6800 0,0800		I .									1						
2002 517.256 2.08.07.26		I .									1					I .	
2003 448-504 2,586.878 642.7% 520 229,885 1.457.125 942.9% 1.0004 0.0004 0.0004 0.0004 0.0006 0.0006 0.0004 0.0006		I .									I						
2015 233.316 2.008.812 782.7% 202 154.027 1.205.537 782.7% 1.6664 0.0960 0.1065 0.0968 0.694 0.555 4.57% 1.205.008 0.008 0.008 0.555 4.57% 1.205.008 0											1					I .	
2005		I .	388,314	2,755,933		226	187,534		709.7%		0.9960						0.4829
2007 240,923 2278,800 348,0% 159 101,929 983,200 345,0% 1.6664 0.9600 0.1157 0.3666 0.861 0.847 4.51% 0.2088 0.2083 2.105,131 1032,978 122 0.8576 747,783 1132,978 1.0664 0.9600 0.1230 0.0866 0.880 0.847 0.888 4.51% 0.8664 0.9600 0.1263 0.0866 0.8770 0.888 4.51% 0.8664 0.9600 0.1263 0.0866 0.8770 0.888 4.51% 0.8664 0.9600 0.1263 0.0866 0.8770 0.888 4.51% 0.8664 0.9600 0.1263 0.0866 0.8770 0.888 4.51% 0.8664 0.9600 0.1263 0.0866 0.8670 0.8770 0.888 4.51% 0.8664 0.9600 0.1263 0.0866 0.8670 0.8770 0.888 4.51% 0.8664 0.9600 0.1263 0.0866 0.8770 0.888 4.51% 0.8664 0.9600 0.1263 0.9600 0.9600 0.9600 0.9600		I .									I						
2039 168552 1,320,172 1132,5% 122 65,676 743,733 1,325% 1,5664 0,9806 0,1255 0,9866 0,374 0,535 4,51% 0,000 1,100 174 1,737,906 1234,000 106 1,200 174 1,730,000 1234,000 106 1,200 174 1,730,000 1234,000 106 1,200 174 1,730,000 1234,000 106 1,200 174 1,200		2037	240,923	2,276,830	945.0%	159	101,929	963,280	945.0%	1.6664	0.9960	0.1157	0.9866	0.884	0.847	4.51%	0.4231
2040 140,774 1,737,666 1224,67% 106 52,776 641,514 1234,67% 1,6864 0,9860 0,1298 0,9866 0,867 0,830 4,51% 2404 94,937 1,385,535 140,94% 79 32,216 470,165 1400,44% 1,6664 0,9860 0,1403 0,9866 0,866 0,866 0,824 4,51% 2404 240,000 24		I .									I					I .	
2046 77.077 12.25.69 158.7% 68 25.033 396.961 146.94% 166.94% 146.		2040	140,774	1,737,966	1234.6%	106	52,176	644,154	1234.6%	1.6664	0.9960	0.1298	0.9866	0.870	0.830	4.51%	0.3706
2043 77,097 1,222,569 165,77% 68 25,033 399,861 1585,77% 1,6694 0.0960 0.1458 0.9860 0.854 0.812 4.51% 2044 0.212 1,086,779 177,77% 1,077,77% 1,086,779 1,777,77% 1,086,779 1,											I						1
2046 98,344 786,756 1997.1% 41 11,119 223,506 198.6 0% 1.8664 0.9960 0.1610 0.9866 0.389 0.799 4.51% 2046 739,344 786,756 1997.1% 1.8664 0.9960 0.1610 0.9866 0.389 0.792 4.51% 2047 30,921 660,602 2136.4% 34 8.416 179.797 2136.4% 1.6664 0.9960 0.1610 0.9866 0.3834 0.786 4.51% 2048 24,110 550,000 2281.5% 28 6.879 143.258 1.6664 0.9960 0.1734 0.9866 0.3870 0.770 4.51% 2048 16,658 451,984 2422.5% 19 34,343 76,996 2242.5% 1.6664 0.9960 0.1734 0.9866 0.3870 0.770 4.51% 2051 10,889 2283,500 2737.5% 15 2.485 86,002 2737.5% 1.6664 0.9960 0.1734 0.9866 0.3871 0.777 4.51% 2051 10,889 2283,500 2737.5% 15 2.485 86,002 2737.5% 1.6664 0.9960 0.1086 0.0170 0.0866 0.0170 0.757 4.51% 2051 10,889 2283,500 2737.5% 15 2.485 86,002 2737.5% 1.6664 0.9960 0.1086 0.0170 0.0866 0.0170 0.756 4.51% 2051 0.0865 0.0170 0.0865 0.0170 0.0866 0.0760 0.0866 0.0760		I .									I						1
2046 39,344 785,756 1997.1% 41 11,191 223,506 1997.1% 1.6664 0.9660 0.1610 0.9866 0.834 0.786 4.51%		I .									1					I .	
2048		I .									I					I .	
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2066 91 3,779 4139.5% 0 11 445 4139.5% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2067 65 2,866 4382.9% 0 7 323 4382.9% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2068 47 2,215 4762.4% 0 5 239 4762.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2069 32 1,725 5310.8% 0 3 178 5310.8% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2070 22 1,289 5745.5% 0 2 127 5745.5% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2071 15 940 6197.1% 0 1 89 6197.1% 16664 0.9960 N/A 0.9866 N/A N/A 4.51% 2072 11 680 6472.6% 0 1 61 6472.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2073 7 501 6899.3% 0 1 43 6899.3% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2074 5 369 7520.4% 0 0 0 30 7520.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2075 3 2 152 8330.4% 0 0 0 19 7802.7% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2076 2 152 8330.4% 0 0 0 11 8330.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2076 2 152 8330.4% 0 0 0 11 8330.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2076 2 152 8330.4% 0 0 0 11 8330.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2076 2 152 8330.4% 0 0 0 11 8330.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2076 2 152 830.6% 0 0 0 6 8768.0% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2076 2 152 830.6% 0 0 0 6 8768.0% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 0 0 7698.6% 0 0 0 6 8768.0% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 0 0 7698.6% 0 0 0 0 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 0 0 7698.6% 0 0 0 0 6 8768.0% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 0 0 7698.6% 0 0 0 0 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 0 0 7698.6% 0 0 0 0 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 0 0 7698.6% 0 0 0 0 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 0 0 7698.6% 0 0 0 0 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 0 0 7698.6% 0 0 0 0 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 0 0 7698.6% 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						1					1					I .	
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2069 32 1,725 5310.8% 0 3 178 5310.8% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2070 22 1,289 5745.5% 0 2 127 5745.5% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2071 15 940 6197.1% 0 1 89 6197.1% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2072 11 680 6472.6% 0 1 61 6472.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2073 7 501 6899.3% 0 1 4 43 6899.3% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2074 5 369 7520.4% 0 0 0 30 7520.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2075 3 243 7802.7% 0 1 0 19 7802.7% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2076 2 152 830.4% 0 0 0 11 8330.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2076 1 15 79 8768.0% 0 0 0 11 8330.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2077 1 79 8768.0% 0 0 0 0 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 40 7698.6% 0 1 0 0 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 27,405,222 16,305,528 59.5% 16,501 41,330,364 21,266,629 51.5% Future 20,100,362 72,867,540 362.5% 9,625 14,645,494 42,867,516 292.7%		I .					7				I						
2070 22 1,289 5745.5% 0 2 127 5745.5% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2071 15 940 6197.1% 0 1 89 6197.1% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2072 11 680 6472.6% 0 1 61 6472.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2073 7 501 6899.3% 0 1 4 43 6899.3% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2074 5 369 7520.4% 0 0 0 30 7520.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2075 3 243 7802.7% 0 0 0 19 7802.7% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2076 2 152 8330.4% 0 10 11 8330.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2076 2 152 8330.4% 0 10 11 8330.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2077 1 79 8768.0% 0 0 0 6 8768.0% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 40 7698.6% 0 1 0 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 40 7698.6% 0 4 10 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 40 7698.6% 0 4 10 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 40 7698.6% 0 4 10 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 40 7698.6% 0 4 10 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 40 7698.6% 0 4 14,330,364 21,266,629 51.5% 51						0	5				1					I .	1
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2073 7 501 6899.3% 0 1 43 6899.3% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2074 5 369 7520.4% 0 0 0 30 7520.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2075 3 243 7802.7% 0 0 1 9 7802.7% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2076 2 152 8330.4% 0 0 1 11 8330.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2077 1 79 8768.0% 0 0 0 6 8768.0% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 40 7698.6% 0 0 0 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 40 7698.6% 0 41,330,364 21,266,629 51.5% Future 20,100,362 72,867,540 362.5% 9,625 14,645,494 42,867,516 292.7%						0	1				1					I .	
2075 3 243 7802.7% 0 0 19 7802.7% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2076 2 152 8330.4% 0 0 11 8330.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2077 1 79 8768.0% 0 0 6 8768.0% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 40 7698.6% 0 0 0 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 40 7698.6% 0 0 0 5 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 40 7698.6% 0 0 0 5 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 N/A 0.9866 N/A		2073	7	501	6899.3%		1	43	6899.3%	1.6664	0.9960	N/A	0.9866	N/A	N/A	4.51%	0.0864
2076 2 152 8330.4% 0 0 11 8330.4% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2077 1 79 8768.0% 0 0 6 8768.0% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 2078-2098 1 40 7698.6% 0 0 0 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% 4.51% Past 27,405,222 16,305,528 59.5% 16,501 41,330,364 21,266,629 51.5% Future 20,100,362 72,867,540 362.5% 9,625 14,645,494 42,867,516 292.7%			5 3			-	0				1					I .	
2078-2098 1 40 7698.6% 0 0 3 7698.6% 1.6664 0.9960 N/A 0.9866 N/A N/A 4.51% Past 27,405,222 16,305,528 59.5% 16,501 41,330,364 21,266,629 51.5% Future 20,100,362 72,867,540 362.5% 9,625 14,645,494 42,867,516 292.7%		2076	2	152	8330.4%	0	0		8330.4%	1.6664	0.9960	N/A	0.9866	N/A	N/A	4.51%	0.0757
Past 27,405,222 16,305,528 59.5% 16,501 41,330,364 21,266,629 51.5% Future 20,100,362 72,867,540 362.5% 9,625 14,645,494 42,867,516 292.7%		I .	1				0	6			1						
Future 20,100,362 72,867,540 362.5% 9,625 14,645,494 42,867,516 292.7%			I			<u> </u>	U	<u> </u>		1.0004	, 0.9900	IN/A	0.000	i N/ A	. IN/ <i>P</i>	-, -, .51/0	. 0.0033
		I .															

- The premiums shown in this exhibit reflect prior rate inreases authorized by Maryland.

There were three prior authorized increases for a cumulative total of approximately 44.90%.
The current requested increase of 15.00% is assumed to be implemented starting 9/1/2020.

- The projections are based on the assumptions derived using experience data through 6/30/2017.

Exhibit II-B

Demonstration that Lifetime Incurred Claims with Requested Increase are Not Less than Lifetime Earned Premium with Prescribed Factors Policy Forms: LTC.02, LTC.03 and LTC.04

Accumulated value of initial earned premium	40,061,714	х	58% =	23,235,794
2a Accumulated value of earned premium 2b Accumulated value of prior premium rate schedule increases (2a-1)	41,330,364 1,268,651	x	85% =	1,078,353
3 Present value of future projected initial earned premium	9,505,775	x	58% =	5,513,349
4a Present value of future projected premium 4b Present value of future projected premium in excess of the projected initial earned premiums (4a-3)	14,645,494 5,139,719	x	85% =	4,368,761
5 Lifetime Earned Premium Times Prescribed Factor: Sum of 1, 2b, 3, and 4b				34,196,257
6a Accumulated value of incurred claims without the inclusion of active life reserves 6b Present value of future projected incurred claims without the inclusion of active life reserves				21,266,629 42,867,516
7 Lifetime Incurred Claims with Rate Increase: Sum of 6a and 6b				64,134,146
8 Test: 7 is not less than 5				TRUE

Attachment 1 Metropolitan Life Insurance Company Assumption Comparison

	Original Pricing Assumptions	Current Best Estimate Assumptions
Interest Rate:	5.75%	Maximum valuation interest rate for contract reserves, which average to 4.51%
Mortality:	TIAA's annuity data 1983 Table A Merged Gender Mod 1 (with ages set back 2.5 years for LTC.02 and 4.5 years for LTC.03/LTC.04)	92% of Annuity 2000 Basic table With Mortality Selection Factors of: Duration Mortality Selection
Voluntary Lapse Rates:	Issue Age Ultimate Lapse 25-42 1% 47 1.5% 52-62 2% 67-82 1% 87+ 0%	Duration Lapse Rate 1 5.00% 2 4.50% 3 3.00% 4 2.00% 5 1.50% 6-7 0.70% 8-10 0.60% 11+ 0.50%
Morbidity U/W:	Morbidity underwriting savings vary by age and duration. Actual assumption is not available.	Current TIAA block experience With Morbidity U/W Selection Factors of: Duration U/W Selection
Incidence:	Incidence rates for nursing home care were based on a study published by the Society of	Sample Ultimate Smoothed Incidence Rates (before gross-up to zero-day elimination)
	Actuaries based on the 1985 NNHS with modifications.	Attained Male Female
	Home health care incidence and continuance rates were based on the nursing home care rates with modifications.	Age Facility Care Home Care Facility Care Home Care 80 1.04% 0.87% 1.36% 0.94% 81 1.23% 1.03% 1.61% 1.10% 82 1.44% 1.20% 1.89% 1.28% 83 1.68% 1.40% 2.21% 1.49% 84 1.93% 1.62% 2.54% 1.72% 85 2.21% 1.87% 2.90% 1.96% Change In 2018, incidence curves were reshaped to better reflect the emerged experience over the
Continuance:	Continuance rates for nursing home care were based on a study published by the Society of Actuaries based on the 1985 NNHS with modifications. Home health care incidence and continuance rates were based on the nursing home care rates with modifications.	years. Continuance curves were constructed in 2016 by gender and care path separately for deaths and recoveries. 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 are recombined into a single termination table for modeling and valuation uses.
Utilization:	Home Care Facility Care Not available Not available	Home Care Facility Care 61% 78%

Attachment 2

Metropolitan Life Insurance Company

Nationwide Experience Projections (Premium Normalized to Include Prior Authorized Increases) Actual to Expected Ratios

Policy Forms: LTC.02, LTC.03 and LTC.04

	Actual o	or Projected Expe	rience	Expect	ted Pricing Experie	nce	
		erience through 12			d based on Origina		
	Projections ba	ased on Current A			ptions since incept		_
	Α	В	C = B / A	D	E	F=E/D	G = C / F
	Earned	Incurred	Loss	Earned	Incurred	Loss	Actual to
Duration	Premium	Claims	Ratio	Premium	Claims	Ratio	Expected Ratio
1	42,122,688	2,825,252	6.7%	42,122,688	1,729,115	4.1%	1.63
2 3	76,311,225 71,811,023	7,344,764 13,121,440	9.6% 18.3%	76,311,225 72,201,489	4,830,254 6,627,192	6.3% 9.2%	1.52 1.99
4	69,413,219	15,414,220	22.2%	68,345,295	8,417,246	12.3%	1.80
5	67,731,502	21,622,002	31.9%	64,629,221	10,501,394	16.2%	1.96
6	66,383,304	23,663,862	35.6%	61,035,113	12,587,782	20.6%	1.73
7	65,611,303	30,862,794	47.0%	57,524,139	15,962,125	27.7%	1.70
8	64,906,031	34,108,620	52.6%	54,061,778	19,389,605	35.9%	1.47
9	64,303,780	41,040,137	63.8%	50,657,541	23,729,423	46.8%	1.36
10	63,448,567	45,794,204	72.2%	47,293,052	27,619,963	58.4%	1.24
11	62,589,593	48,208,930	77.0%	43,985,515	31,224,828	71.0%	1.09
12	62,096,284	60,627,050	97.6%	40,718,880	34,571,676	84.9%	1.15
13	61,624,432	55,990,655	90.9%	37,499,331	37,376,517	99.7%	0.91
14	61,723,004	71,528,293	115.9%	34,368,007	40,920,998	119.1%	0.97
15 16	61,887,337	80,129,090	129.5%	31,320,218	42,997,789	137.3%	0.94
16 17	61,757,367 60,720,880	83,278,712 87,180,615	134.8% 143.6%	28,653,567 26,027,486	44,969,594 48,460,857	156.9% 186.2%	0.86 0.77
18	59,900,473	98,271,202	164.1%	23,431,076	50,889,881	217.2%	0.76
19	61,292,305	95,177,258	155.3%	20,948,482	53,527,991	255.5%	0.61
20	59,842,597	100,356,524	167.7%	18,592,835	54,391,593	292.5%	0.57
21	56,448,960	108,909,683	192.9%	16,384,883	55,446,877	338.4%	0.57
22	52,130,188	108,837,718	208.8%	14,296,892	56,692,598	396.5%	0.53
23	47,917,728	114,128,472	238.2%	12,360,941	55,413,390	448.3%	0.53
24	43,638,795	116,611,935	267.2%	10,669,158	52,637,720	493.4%	0.54
25	39,418,478	118,555,968	300.8%	9,161,559	51,867,776	566.1%	0.53
26	35,397,550	118,541,421	334.9%	7,818,235	52,370,410	669.8%	0.50
27	31,580,013	118,655,547	375.7%	6,575,031	50,830,982	773.1%	0.49
28	27,998,527	117,315,694	419.0%	5,491,992	46,377,619	844.5%	0.50
29 30	24,656,899 21,575,527	115,096,395 111,932,361	466.8% 518.8%	4,598,798 3,845,604	39,739,652 37,460,420	864.1% 974.1%	0.54 0.53
31	18,756,707	107,929,739	575.4%	3,180,794	36,551,873	1149.1%	0.50
32	16,198,671	103,215,049	637.2%	2,604,689	33,670,242	1292.7%	0.49
33	13,895,445	97,784,015	703.7%	2,159,082	26,692,442	1236.3%	0.57
34	11,837,340	91,783,167	775.4%	1,817,458	23,042,319	1267.8%	0.61
35	10,015,621	85,386,627	852.5%	1,515,380	21,817,776	1439.8%	0.59
36	8,415,746	78,736,569	935.6%	1,229,801	22,332,541	1815.9%	0.52
37	7,022,399	71,949,917	1024.6%	960,606	22,453,567	2337.4%	0.44
38	5,818,779	65,137,542	1119.4%	727,710	20,203,172	2776.3%	0.40
39	4,787,839	58,465,928	1221.1%	552,386	16,514,723	2989.7%	0.41
40	3,912,094	51,987,558	1328.9%	446,181	9,512,861	2132.1%	0.62
41	3,174,409	45,818,159	1443.4%	392,080	4,834,351	1233.0%	1.17
42	2,557,716	40,015,039	1564.5%	354,931	3,837,385	1081.2%	1.45
43 44	2,046,475 1,626,136	34,647,252 29,720,076	1693.0% 1827.7%	320,622 286,222	4,043,499 4,384,946	1261.1% 1532.0%	1.34 1.19
44 45	1,283,458	25,272,135	1969.1%	251,312	4,384,946	1855.1%	1.06
45 46	1,006,292	21,328,880	2119.6%	216,656	4,901,344	2262.3%	0.94
47	783,793	17,831,738	2275.1%	183,071	5,049,216	2758.1%	0.82
48	606,706	14,768,823	2434.3%	152,087	4,951,054	3255.4%	0.75
49	466,841	12,122,582	2596.7%	125,180	4,686,627	3743.9%	0.69
50	357,303	9,859,359	2759.4%	104,295	3,521,490	3376.5%	0.82
51	272,154	7,961,677	2925.4%	89,696	2,558,937	2852.9%	1.03
52	206,460	6,384,027	3092.1%	77,652	1,951,714	2513.4%	1.23
53	156,044	5,069,811	3249.0%	66,674	2,051,000	3076.2%	1.06
54	117,613	4,002,855	3403.4%	55,740	2,202,615	3951.6%	0.86
55 50	88,420	3,141,024	3552.4%	44,719	2,319,314	5186.4%	0.68
56	66,399	2,455,997	3698.9%	33,925	2,398,802	7070.9%	0.52
57 58	49,848	1,908,449	3828.5%	23,691	2,442,662	10310.4%	0.37
58 59	37,452 28,202	1,482,128 1,145,108	3957.4% 4060.4%	14,521 7,064	2,387,321 2,219,333	16440.7% 31417.4%	0.24 0.13
59 60	26,202 21,316	886,920	4160.9%	2,373	1,474,568	62136.4%	0.13
	21,010	555,520	7100.370	2,070	1,777,000	02100.470	0.07
lifotimo	1 761 052 255	2 262 229 071	105 20/	1 009 026 631	1 260 222 105	125 70/	1 26

1,761,853,255 185.2% 1,008,926,631 135.7% 1.36 Lifetime 3,263,328,971 1,369,233,105 Lifetime* 980,827,944 117.2% 609,348,892 432,637,752 71.0% 1,149,658,529 1.65

Note:

- Figures in column A are normalized to reflect the prior rate action authorized by Maryland rather than the prior rate action approved by other states.
- Figures in column D do not reflect any rate action.
- * Columns A and B are discounted back to the inception date at an interest rate of 4.51%, 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 5.75%.

Attachment 3

Metropolitan Life Insurance Company

Nationwide Experience Projections (Premium Normalized to Include Prior Authorized Increases)

Actual to Expected Ratios

Policy Forms: LTC.02, LTC.03 and LTC.04

			Projected Exper		· · · · · · · · · · · · · · · · · · ·	d Pricing Exper				ve Loss Ratio as of	
		A	В	C = B / A	D	E	F = E / D	G = C / F	H		J = H / I
	Calendar Year	Earned Premium	Incurred Claims	Loss Ratio	Earned Premium	Incurred Claims	Loss Ratio	Actual to Expected Ratio	· ·	Expected at 5.75%	Actual to Expected Ratio
	1991	236,752	0	0.0%	236,752	13,051	5.5%	0.00	at 4.51% (on C) 0.0%	(on F) 5.5%	0.00
	1992	1,001,528	12,795	1.3%	1,319,993	89,695	6.8%	0.19	1.0%	6.6%	0.16
	1993	1,836,721	88,383	4.8%	2,174,781	174,758	8.0%	0.60	3.2%	7.4%	0.44
	1994	2,576,020	630,822	24.5%	2,794,493	273,545	9.8%	2.50	12.6%	8.4%	1.50
	1995	4,000,511	355,644	8.9%	5,278,559	494,086	9.4%	0.95	11.1%	8.8%	1.26
	1996	8,028,467	1,479,819	18.4%	9,743,868	887,574	9.1%	2.02	14.3%	8.9%	1.60
	1997	11,468,941	1,826,216	15.9%	11,441,992	1,283,375	11.2%	1.42	14.9%	9.7%	1.54
	1998	16,887,682	2,710,864	16.1%	21,566,873	2,188,098	10.1%	1.58	15.3%	9.8%	1.55
	1999 2000	28,570,510 38,527,352	5,905,951 7,405,276	20.7% 19.2%	33,381,322 48,003,078	3,476,623 5,283,258	10.4% 11.0%	1.98 1.75	17.2% 17.8%	10.0% 10.3%	1.71 1.72
	2001	48,864,876	9,570,375	19.2%	54,084,963	7,160,002	13.2%	1.73	18.3%	11.1%	1.65
	2002	55,785,945	13,959,089	25.0%	57,274,692	9,269,540	16.2%	1.55	19.9%	12.1%	1.64
	2003	61,686,649	17,919,043	29.0%	60,469,423	11,631,848	19.2%	1.51	21.7%	13.3%	1.63
Historical	2004	64,809,682	23,294,582	35.9%	58,408,001	14,184,437	24.3%	1.48	24.0%	14.8%	1.63
Experience	2005	64,016,577	33,631,116	52.5%	55,347,692	16,946,263	30.6%	1.72	27.9%	16.5%	1.69
	2006	63,346,011	29,298,106	46.3%	52,341,831	20,081,193	38.4%	1.21	30.0%	18.4%	1.63
	2007	62,994,681	35,823,680	56.9%	49,368,733	23,407,205	47.4%	1.20	32.6%	20.5%	1.59
	2008	62,696,015	45,210,430	72.1%	46,422,674	26,850,402	57.8%	1.25	36.0%	22.7%	1.58
	2009 2010	62,119,757 61,366,092	46,923,133 51,237,723	75.5% 83.5%	43,498,253 40,602,337	30,253,481 33,365,740	69.6% 82.2%	1.09 1.02	38.9% 41.8%	25.1% 27.6%	1.55 1.52
	2010	59,402,016	53,047,819	89.3%	37,747,995	36,372,076	96.4%	0.93	44.6%	30.0%	1.32
	2011	59,525,159	60,887,612	102.3%	34,929,654	39,092,320	111.9%	0.91	47.6%	32.6%	1.46
	2013	63,376,539	71,261,820	112.4%	32,192,558	41,499,030	128.9%	0.87	50.9%	35.1%	1.45
	2014	61,409,394	76,044,062	123.8%	29,550,386	43,651,453	147.7%	0.84	54.1%	37.6%	1.44
	2015	59,016,364	82,859,304	140.4%	27,016,908	46,813,668	173.3%	0.81	57.5%	40.1%	1.43
	2016	55,757,532	91,561,658	164.2%	24,567,935	49,149,088	200.1%	0.82	61.2%	42.7%	1.43
	2017	54,417,050	94,963,030	174.5%	22,203,622	51,012,754	229.7%	0.76	64.7%	45.2%	1.43
	2018 2019	60,735,662 57,990,968	94,618,935 98,928,016	155.8% 170.6%	19,949,535 17,800,040	52,384,462 53,325,231	262.6% 299.6%	0.59 0.57	67.7% 70.6%	47.6% 50.0%	1.42 1.41
	2019	57,101,286	102,738,764	170.0%	15,762,420	53,814,801	341.4%	0.57	73.5%	52.3%	1.41
	2021	52,671,940	105,955,043	201.2%	13,857,023	53,640,894	387.1%	0.52	76.4%	54.5%	1.40
	2022	48,170,917	108,611,320	225.5%	12,098,442	52,673,268	435.4%	0.52	79.3%	56.5%	1.40
	2023	43,829,123	110,673,322	252.5%	10,502,455	51,311,462	488.6%	0.52	82.2%	58.4%	1.41
	2024	39,669,919	112,032,136	282.4%	9,057,903	49,874,141	550.6%	0.51	85.0%	60.1%	1.41
	2025	35,716,887	112,710,280	315.6%	7,758,291	48,100,209	620.0%	0.51	87.8%	61.7%	1.42
	2026	31,968,564	112,558,065	352.1%	6,602,016	45,396,651	687.6%	0.51	90.5%	63.1%	1.43
Projected	2027 2028	28,451,362 25,182,090	111,571,122 109,765,590	392.1% 435.9%	5,588,853 4,711,312	42,167,856 38,882,627	754.5% 825.3%	0.52 0.53	93.1% 95.6%	64.4% 65.5%	1.45 1.46
Experience	2028	22,163,063	107,108,717	483.3%	3,950,205	36,042,448	912.4%	0.53	98.0%	66.5%	1.47
Experience	2030	19,388,991	103,740,144	535.0%	3,296,946	32,872,025	997.0%	0.54	100.2%	67.3%	1.49
	2031	16,860,840	99,675,772	591.2%	2,746,846	29,444,604	1071.9%	0.55	102.2%	68.0%	1.50
	2032	14,571,021	95,001,051	652.0%	2,287,883	26,200,731	1145.2%	0.57	104.1%	68.6%	1.52
	2033	12,513,832	89,825,230	717.8%	1,900,575	23,735,519	1248.9%	0.57	105.9%	69.2%	1.53
	2034	10,679,137	84,191,113	788.4%	1,567,244	21,761,790	1388.5%	0.57	107.5%	69.6%	1.54
	2035	9,055,227	78,258,744	864.2%	1,279,887	19,816,450	1548.3%	0.56	108.9%	70.0%	1.56
	2036 2037	7,629,291 6,386,684	72,140,302 65,956,499	945.6% 1032.7%	1,033,812 828,723	17,961,095 15,546,910	1737.4% 1876.0%	0.54 0.55	110.1% 111.3%	70.4% 70.6%	1.57 1.58
	2037	5,311,468	59,821,952	1126.3%	667,279	12,651,318	1896.0%	0.59	112.2%	70.9%	1.58
	2039	4,388,397	53,771,124	1225.3%	547,387	9,657,979	1764.4%	0.69	113.1%	71.0%	1.59
	2040	3,601,998	47,946,172	1331.1%	461,242	7,286,868	1579.8%	0.84	113.8%	71.1%	1.60
	2041	2,936,957	42,369,965	1442.6%	398,355	5,777,316	1450.3%	0.99	114.4%	71.2%	1.61
	2042	2,378,642	37,133,852	1561.1%	350,214	4,826,209	1378.1%	1.13	114.9%	71.3%	1.61
	2043	1,913,595	32,257,244	1685.7%	310,000	4,423,098	1426.8%	1.18	115.4%	71.3%	1.62
	2044	1,529,046	27,763,252	1815.7%	272,902	4,378,579	1604.4%	1.13	115.7%	71.4%	1.62
	2045 2046	1,213,681 957,013	23,700,413 20,042,098	1952.8% 2094.2%	237,503 204,079	4,379,093 4,317,922	1843.8% 2115.8%	1.06 0.99	116.0% 116.3%	71.4% 71.5%	1.62 1.63
	2046	749,783	16,802,131	2094.2%	173,463	4,084,348	2354.6%	0.99	116.4%	71.5% 71.5%	1.63
	2048	583,718	13,968,529	2393.0%	146,628	3,708,041	2528.9%	0.95	116.6%	71.5%	1.63
	2049	451,738	11,511,986	2548.4%	123,880	3,199,809	2583.0%	0.99	116.7%	71.6%	1.63
	2050	347,673	9,403,655	2704.7%	104,872	2,754,130	2626.2%	1.03	116.8%	71.6%	1.63
	2051	266,319	7,622,670	2862.2%	88,620	2,436,669	2749.6%	1.04	116.9%	72.0%	1.62
	2052	203,088	6,133,688	3020.2%	74,314	2,241,922	3016.8%	1.00	116.9%	72.0%	1.62
	2053	154,190	4,895,940	3175.3%	61,294	2,145,705	3500.7%	0.91	117.0%	72.0%	1.62
	2054 2055	116,636 87,985	3,874,074 3,048,184	3321.5% 3464.5%	49,093 37,720	2,098,018 2,049,554	4273.6% 5433.6%	0.78 0.64	117.0% 117.1%	72.0% 72.0%	1.63 1.63
	2055 2056	87,985 66,247	3,048,184 2,372,513	3464.5% 3581.3%	37,720 27,377	2,049,554 1,958,240	5433.6% 7152.8%	0.64 0.50	117.1% 117.1%	72.0% 72.0%	1.63 1.63
	2056	49,805	1,839,570	3693.6%	18,449	1,768,390	9585.4%	0.30	117.1%	72.0% 72.0%	1.63
	2058	37,429	1,417,859	3788.1%	11,369	1,475,237	12975.8%	0.29	117.1%	72.0%	1.63
				3864.1%	6,325	1,067,059	16870.6%	0.23	117.1%	72.0%	1.63
l	2059	28,163	1,088,221	3004.170	0,323						<u>-</u>
	2059 2060	28,163 21,248	1,088,221 833,073	3920.7%	3,131	683,820	21837.3%	0.18	117.1%	72.0%	1.63
	2060	21,248	833,073	3920.7%	3,131						
						683,820 514,904,563 854,322,499	21837.3% 59.7% 581.3%	0.18 1.27 0.66	117.1% 64.7% 316.4%	72.0% 45.2% 485.4%	1.63 1.43 0.65

- Note:
 Figures in column A are normalized to reflect the prior rate action authorized by Maryland rather than the prior rate action approved by other states.
 Figures in column D do not reflect any rate action.

Attachment 4
Metropolitan Life Insurance Company
Actual to Expected Lapse/Mortality
TIAA Business

Lapse									
Policy Duration	Actual	Expected *	A/E%						
1	870	2,433	35.75%						
2	923	2,133	43.28%						
3	661	1,391	47.53%						
4	564	908	62.08%						
5	446	668	66.73%						
6+	2,497	3,020	82.70%						

Mortality									
Policy Duration	Actual	Expected *	A/E%						
1	96	124	77.25%						
2	235	268	87.82%						
3	311	318	97.92%						
4	361	405	89.04%						
5	445	472	94.38%						
6	443	546	81.20%						
7	514	627	82.04%						
8	550	715	76.91%						
9	660	811	81.40%						
10	689	912	75.52%						
11	726	1,018	71.31%						
12	768	1,076	71.36%						
13	834	1,134	73.56%						
14+	4,594	5,316	86.42%						

^{*} The expecteds are based on current best estimate assumptions.

Attachment 4 Metropolitan Life Insurance Company Actual to Expected Incidence TIAA Business

	Female						Male					
	Facility Care			Home Care			Facility Care			Home Care		
Attained Age	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%
under 50	0	1	0%	4	1	659%	0	0	0%	0	0	0%
50 to 54	1	2	58%	1	2	50%	1	1	135%	1	1	114%
55 to 59	3	6	46%	7	8	90%	1	3	32%	2	4	52%
60 to 64	15	20	76%	23	25	92%	8	11	71%	10	14	70%
65 to 69	50	51	99%	61	58	105%	38	35	109%	43	41	104%
70 to 74	220	187	118%	162	155	104%	128	132	97%	131	129	102%
75 to 79	476	491	97%	352	356	99%	349	346	101%	316	301	105%
80 to 84	764	773	99%	518	526	99%	524	527	99%	417	440	95%
85 to 89	659	650	101%	453	448	101%	426	422	101%	397	366	108%
over 89	249	267	93%	178	206	87%	162	161	101%	163	161	101%
Total	2,437	2,446	100%	1,759	1,784	99%	1,637	1,638	100%	1,480	1,457	102%

¹ Based on actual experience through 6/30/2017.

² The expected claims are based on current best estimate assumptions.

Attachment 4
Metropolitan Life Insurance Company
Actual to Expected Claim Termination
All Business (exclude AARP-Pru)

Claim Duration (Months)	Actual Deaths	Expected Deaths ¹	Actual Recoveries	Expected Recoveries ¹	Deaths A/E%	Recoveries A/E%	Total A/E%
1	881	542	64	85	163%	76%	151%
2	766	1,329	163	260	58%	63%	58%
3	822	1,155	251	247	71%	102%	77%
4	928	1,272	324	281	73%	115%	81%
5	926	1,047	288	230	88%	125%	95%
6	806	916	212	199	88%	106%	91%
7	703	760	193	164	93%	118%	97%
8	631	654	143	136	96%	105%	98%
9	613	575	123	114	107%	108%	107%
10	541	519	120	97	104%	124%	107%
11	491	478	91	84	103%	108%	104%
12	536	449	87	74	119%	118%	119%
13	442	423	78	66	104%	118%	106%
14+	13,138	11,830	1,272	1,427	111%	89%	109%
Total	22,224	21,949	3,409	3,461	101%	98%	101%

¹ The expected deaths and recoveries are based on current best estimate assumptions.