

State: Pennsylvania **Filing Company:** Massachusetts Mutual Life Insurance Company
TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified
Product Name: Long-Term Care
Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Filing at a Glance

Company: Massachusetts Mutual Life Insurance Company
Product Name: Long-Term Care
State: Pennsylvania
TOI: LTC03I Individual Long Term Care
Sub-TOI: LTC03I.001 Qualified
Filing Type: Rate - Other (Not M.U. or G.I. Product)
Date Submitted: 07/30/2018
SERFF Tr Num: MILL-131506880
SERFF Status: Assigned
State Tr Num: MILL-131506880
State Status: Received Review in Progress
Co Tr Num: MASSMUTUAL

Implementation: On Approval
Date Requested:
Author(s): Missy Gordon, Andrea Steffan, Shawn Stender, Brandon Johnson, Jack Bridges, Dexter Mosley, Cassi Noel, Megan Anderson, Peder Swenson, Yi Shao, Rylee Sevigny
Reviewer(s): Jim Laverty (primary)
Disposition Date:
Disposition Status:
Implementation Date:

State Filing Description:

Proposed aggregate 77% increase on 5,384 policyholders of Mass Mutual forms MM-200-P-PA, MM-201-P-PA, MM-202-P-PA, MM-203-P-PA, MM-200-P-1-PA, MM-201-P-1-PA, MM-202-P-1-PA, MM-203-P-1-PA, MM-400-P-PA, MM-401-P-PA, MM-402-P-PA, MM-403-P-PA, MM-404-P-PA, MM-405-P-PA, MM500-P-PA, MM502-P-PA, MM500-P-1-PA, and MM502-P-1-PA.

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General Information

Project Name: MassMutual LTC Rate Increase Filing
Project Number: 145MML01-10.02
Requested Filing Mode: Review & Approval

Explanation for Combination/Other:
Submission Type: New Submission
Overall Rate Impact: 77%

Deemer Date:
Submitted By: Shawn Stender

Status of Filing in Domicile: Pending
Date Approved in Domicile:
Domicile Status Comments: A filing was submitted in Massachusetts on May 14, 2018.
Market Type: Individual
Individual Market Type:
Filing Status Changed: 07/30/2018
State Status Changed: 07/30/2018
Created By: Yi Shao
Corresponding Filing Tracking Number:
State TOI: LTC03I Individual Long Term Care

Filing Description:

On behalf of Massachusetts Mutual Life Insurance Company (MassMutual), we are submitting the referenced rate filing for your review. These are existing tax-qualified policy forms that provide long-term care coverage. These policy forms were written by MassMutual and issued in Pennsylvania between July 19, 2000 and April 7, 2013. The forms are no longer being marketed in any jurisdiction.

The company is requesting a premium rate increase on these forms, including all associated riders. These forms are in need of a premium rate increase due to emerging and projected experience running more adverse than previously expected.

The company is requesting a premium rate increase to achieve a rate level consistent with that on its currently marketed 513 Series new business product. The resulting rate increase varies by rate series and all available options and riders. This rate increase is then capped on a seriatim basis such that no insured will receive a rate increase in excess of 100%. The table in the cover letter provides the distribution, range, and average requested rate increase in Pennsylvania by rate series.

There have been no previous rate revisions on these forms. The company is seeking a rate increase at this time to help alleviate the adverse performance on this business.

The company will offer insureds affected by the premium increase the option of reducing their policy benefits to provide flexibility of choice for those insureds who wish to maintain a premium level reasonably similar to what they were paying prior to the rate increase. Options for reducing policy benefits include reducing the benefit period or maximum daily benefit amount, extending the elimination period, and removing or reducing optional riders. The company will offer a contingent benefit upon lapse to insureds that trigger a substantial rate increase. Additionally, the company will voluntarily offer a contingent benefit upon lapse to insureds affected by the rate increase, even if the increase is not considered substantial.

Company and Contact

Filing Contact Information

Shawn Stender, Assistant Actuary shawn.stender@milliman.com
Milliman, Inc. 952-820-3104 [Phone]
8500 Normandale Lake Blvd.
Suite 1850
Minneapolis, MN 55437

State: Pennsylvania **Filing Company:** Massachusetts Mutual Life Insurance Company
TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified
Product Name: Long-Term Care
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Filing Company Information

(This filing was made by a third party - millimaninc)

Massachusetts Mutual Life Insurance Company	CoCode: 65935	State of Domicile:
1295 State Street	Group Code: 435	Massachusetts
Springfield, MA 01111	Group Name:	Company Type:
(413) 788-8411 ext. [Phone]	FEIN Number: 04-1590850	Life/Accident/Health
		State ID Number:

Filing Fees

Fee Required? Yes
 Fee Amount: \$150.00
 Retaliatory? Yes
 Fee Explanation: There is a \$150 filing fee in the state of domicile.
 Per Company: Yes

Company	Amount	Date Processed	Transaction #
Massachusetts Mutual Life Insurance Company	\$150.00	07/30/2018	143941422

SERFF Tracking #:

MILL-131506880

State Tracking #:

MILL-131506880

Company Tracking #:

MASSMUTUAL

State: Pennsylvania

Filing Company: Massachusetts Mutual Life Insurance Company

TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified

Product Name: Long-Term Care

Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Rate Information

Rate data applies to filing.

Filing Method: Review and Approval

Rate Change Type: Increase

Overall Percentage of Last Rate Revision: %

Effective Date of Last Rate Revision:

Filing Method of Last Filing: N/A

SERFF Tracking Number of Last Filing:

Company Rate Information

Company Name:	Overall % Indicated Change:	Overall % Rate Impact:	Written Premium Change for this Program:	Number of Policy Holders Affected for this Program:	Written Premium for this Program:	Maximum % Change (where req'd):	Minimum % Change (where req'd):
Massachusetts Mutual Life Insurance Company	77.000%	77.000%	\$8,151,230	5,384	\$10,600,276	100.000%	0.000%

SERFF Tracking #:

MILL-131506880

State Tracking #:

MILL-131506880

Company Tracking #:

MASSMUTUAL

State:

Pennsylvania

Filing Company:

Massachusetts Mutual Life Insurance Company

TOI/Sub-TOI:

LTC03I Individual Long Term Care/LTC03I.001 Qualified

Product Name:

Long-Term Care

Project Name/Number:

MassMutual LTC Rate Increase Filing/145MML01-10.02

Rate/Rule Schedule

Item No.	Schedule Item Status	Document Name	Affected Form Numbers (Separated with commas)	Rate Action	Rate Action Information	Attachments
1		Rate Tables	MM-200-P-PA, MM-201-P-PA, MM-202-P-PA, MM-203-P-PA, MM-200-P-1-PA, MM-201-P-1-PA, MM-202-P-1-PA, MM-203-P-1-PA, MM-400-P-PA, MM-401-P-PA, MM-402-P-PA, MM-403-P-PA, MM-404-P-PA, MM-405-P-PA, MM500-P-PA, MM502-P-PA, MM500-P-1-PA, MM502-P-1-PA, et al.	Revised	Previous State Filing Number: N/A Percent Rate Change Request: 77	PA_Current Rate Tables_20180730.pdf, PA_Proposed Rate Tables_20180730.pdf,

Massachusetts Mutual Life Insurance Company
1295 State Street, Springfield, MA 01111
200 Series
Current Premium Rates

Issue Age	Annual Base Rates			Premium Factors										
	per \$10 of Daily Benefit Amount			Lifetime Pay Inflation Protection			Limited Pay		Limited Pay Inflation Protection			Nonforfeiture		HCBS
	Facility Only	Comprehensive	None	5% Simple	5% Compound	10 Year	20 Year	None	5% Simple	5% Compound	Full	Shortened BP	Prem Wvr	
18	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
19	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
20	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
21	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
22	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
23	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
24	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
25	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
26	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
27	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
28	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
29	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
30	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
31	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
32	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
33	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
34	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
35	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
36	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
37	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
38	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
39	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
40	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.458	1.000	3.000	4.250	1.472	1.243	1.050	
41	\$32.80	\$41.00	1.000	2.420	3.580	2.480	1.449	1.000	2.910	4.150	1.486	1.249	1.052	
42	\$33.60	\$42.00	1.000	2.340	3.510	2.460	1.440	1.000	2.820	4.050	1.500	1.254	1.054	
43	\$34.40	\$43.00	1.000	2.260	3.440	2.440	1.431	1.000	2.730	3.950	1.515	1.260	1.056	
44	\$35.20	\$44.00	1.000	2.180	3.370	2.420	1.422	1.000	2.640	3.850	1.529	1.265	1.058	
45	\$36.00	\$45.00	1.000	2.100	3.300	2.400	1.413	1.000	2.550	3.750	1.543	1.271	1.060	
46	\$36.80	\$46.00	1.000	2.040	3.230	2.380	1.404	1.000	2.460	3.670	1.558	1.276	1.062	
47	\$37.60	\$47.00	1.000	1.980	3.160	2.360	1.395	1.000	2.370	3.590	1.572	1.282	1.064	
48	\$38.40	\$48.00	1.000	1.940	3.100	2.340	1.386	1.000	2.280	3.510	1.586	1.287	1.066	
49	\$40.00	\$50.00	1.000	1.900	3.040	2.320	1.377	1.000	2.190	3.430	1.601	1.293	1.068	
50	\$41.60	\$52.00	1.000	1.860	3.000	2.300	1.368	1.000	2.100	3.400	1.615	1.298	1.070	
51	\$43.20	\$54.00	1.000	1.820	2.940	2.280	1.359	1.000	2.080	3.330	1.629	1.304	1.072	
52	\$44.80	\$56.00	1.000	1.780	2.880	2.260	1.350	1.000	2.060	3.260	1.643	1.309	1.074	
53	\$47.20	\$59.00	1.000	1.750	2.820	2.240	1.341	1.000	2.040	3.190	1.658	1.315	1.076	
54	\$49.60	\$62.00	1.000	1.720	2.760	2.220	1.332	1.000	2.020	3.120	1.672	1.320	1.078	
55	\$52.00	\$65.00	1.000	1.690	2.700	2.200	1.323	1.000	2.000	3.050	1.686	1.326	1.080	
56	\$54.40	\$68.00	1.000	1.660	2.630	2.180	1.314	1.000	1.980	2.970	1.701	1.331	1.082	
57	\$56.80	\$71.00	1.000	1.640	2.560	2.160	1.305	1.000	1.960	2.890	1.715	1.337	1.084	
58	\$59.20	\$74.00	1.000	1.620	2.490	2.140	1.296	1.000	1.940	2.810	1.729	1.342	1.086	
59	\$62.40	\$78.00	1.000	1.600	2.420	2.120	1.287	1.000	1.920	2.730	1.744	1.348	1.088	
60	\$65.60	\$82.00	1.000	1.580	2.350	2.100	1.278	1.000	1.900	2.650	1.758	1.353	1.090	
61	\$76.00	\$95.00	1.000	1.560	2.280	2.080	1.269	1.000	1.880	2.570	1.772	1.359	1.092	
62	\$86.40	\$108.00	1.000	1.550	2.210	2.060	1.260	1.000	1.860	2.490	1.786	1.364	1.094	
63	\$92.80	\$116.00	1.000	1.540	2.140	2.040	1.251	1.000	1.840	2.410	1.801	1.370	1.096	
64	\$99.20	\$124.00	1.000	1.530	2.070	2.020	1.242	1.000	1.820	2.330	1.815	1.375	1.098	
65	\$105.60	\$132.00	1.000	1.520	2.000	2.000	1.233	1.000	1.800	2.250	1.844	1.386	1.100	
66	\$125.60	\$157.00	1.000	1.510	1.940	1.950	1.224	1.000	1.770	2.200	1.872	1.397	1.102	
67	\$145.60	\$182.00	1.000	1.500	1.890	1.900	1.215	1.000	1.740	2.150	1.901	1.408	1.104	
68	\$158.40	\$198.00	1.000	1.480	1.840	1.850	1.206	1.000	1.710	2.100	1.929	1.419	1.106	
69	\$171.20	\$214.00	1.000	1.460	1.790	1.800	1.197	1.000	1.680	2.050	1.958	1.430	1.108	
70	\$184.00	\$230.00	1.000	1.450	1.730	1.750	1.188	1.000	1.650	2.000	1.987	1.441	1.110	
71	\$211.20	\$264.00	1.000	1.440	1.690	1.700	1.179	1.000	1.630	1.950	2.015	1.452	1.112	
72	\$238.40	\$298.00	1.000	1.430	1.660	1.650	1.170	1.000	1.610	1.900	2.044	1.463	1.114	
73	\$265.60	\$332.00	1.000	1.420	1.640	1.600	1.161	1.000	1.590	1.850	2.072	1.474	1.116	
74	\$292.80	\$366.00	1.000	1.410	1.620	1.550	1.152	1.000	1.570	1.830	2.101	1.485	1.118	
75	\$320.00	\$400.00	1.000	1.400	1.600	1.500	1.143	1.000	1.550	1.800	2.115	1.491	1.120	
76	\$371.20	\$464.00	1.000	1.390	1.580	1.480	1.134	1.000	1.530	1.770	2.130	1.496	1.122	
77	\$422.40	\$528.00	1.000	1.380	1.560	1.460	1.125	1.000	1.510	1.740	2.144	1.502	1.124	
78	\$473.60	\$592.00	1.000	1.370	1.540	1.440	1.116	1.000	1.490	1.710	2.158	1.507	1.126	
79	\$524.80	\$656.00	1.000	1.360	1.520	1.420	1.107	1.000	1.470	1.680	2.173	1.513	1.128	
80	\$576.00	\$720.00	1.000	1.350	1.500	1.400	1.098	1.000	1.450	1.650	2.187	1.518	1.130	
81	\$627.20	\$784.00	1.000	1.340	1.490	1.380	1.089	1.000	1.430	1.630	2.201	1.524	1.132	
82	\$678.40	\$848.00	1.000	1.330	1.480	1.360	1.080	1.000	1.410	1.610	2.215	1.529	1.134	
83	\$739.20	\$924.00	1.000	1.320	1.470	1.340	1.071	1.000	1.390	1.590	2.230	1.535	1.136	
84	\$800.00	\$1,000.00	1.000	1.310	1.460	1.320	1.062	1.000	1.370	1.570	2.244	1.540	1.138	

Multi-Life Discounts		Factor
Employer or Association Iss Age < 65		0.850
Employer or Association Iss Age >= 65		0.900
Home Office and Career Agents Iss Age < 65		0.800
Home Office and Career Agents Iss Age >= 65		0.850
Individual Underwriting Classes		Factor
Ultra Preferred		0.800
Preferred		1.000
Standard		1.250
Joint Policy Factor		Factor
		1.500
Joint Risk Class		Factor
2 Ultra Preferred		0.800
1 Ultra Preferred and 1 Preferred		0.900
1 Ultra Preferred and 1 Standard		1.025
2 Preferred		1.000
1 Preferred and 1 Standard		1.125
2 Standard		1.250
Benefit Type		Factor
Daily Reimbursement		1.000
Home and Community Based Services (HCBS)		1.200
Enhancement Rider		1.200
Indemnity Rider		1.200
Caregiver Indemnity Rider		2.000
Elimination Period		Factor
0 Day		1.300
30 Day		1.150
60 Day		1.000
90 Day		1.000
180 Day		1.000
Benefit Period		Factor
3 Year		0.650
4 Year		N/A
5 Year		N/A
6 Year		0.900
10 Year		N/A
Lifetime		1.000
Payment Mode		Factor
Annual		1.000
Semi-Annual		0.520
Quarterly		0.270
Monthly - Pre-Authorized Check		0.085
Discounted Renewal Premium Factor		Factor
		0.750

Massachusetts Mutual Life Insurance Company
1295 State Street, Springfield, MA 01111
200 Series with 2001 Revised Rates
Current Premium Rates

Issue Age	Annual Base Rates		Premium Factors										
	per \$10 of Daily Benefit Amount		Lifetime Pay Inflation Protection			Limited Pay		Limited Pay Inflation Protection			Nonforfeiture		HCBS
	Facility Only	Comprehensive	None	5% Simple	5% Compound	10 Year	20 Year	None	5% Simple	5% Compound	Full	Shortened BP	Prem Wvr
18	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.458	1.000	2.727	3.864	1.472	1.243	1.030
19	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.458	1.000	2.727	3.864	1.472	1.243	1.030
20	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.458	1.000	2.727	3.864	1.472	1.243	1.030
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31	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.458	1.000	2.727	3.864	1.472	1.243	1.030
32	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.458	1.000	2.727	3.864	1.472	1.243	1.030
33	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.458	1.000	2.727	3.864	1.472	1.243	1.030
34	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.458	1.000	2.727	3.864	1.472	1.243	1.030
35	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.458	1.000	2.727	3.864	1.472	1.243	1.030
36	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.458	1.000	2.727	3.864	1.472	1.243	1.030
37	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.458	1.000	2.727	3.864	1.472	1.243	1.030
38	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.458	1.000	2.727	3.864	1.472	1.243	1.030
39	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.458	1.000	2.727	3.864	1.472	1.243	1.030
40	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.458	1.000	2.727	3.864	1.472	1.243	1.030
41	\$36.00	\$45.00	1.000	1.726	2.380	2.480	1.449	1.000	2.651	3.781	1.486	1.249	1.032
42	\$36.80	\$46.00	1.000	1.702	2.360	2.460	1.440	1.000	2.575	3.698	1.500	1.254	1.034
43	\$37.60	\$47.00	1.000	1.678	2.340	2.440	1.431	1.000	2.498	3.614	1.515	1.260	1.036
44	\$38.40	\$48.00	1.000	1.654	2.320	2.420	1.422	1.000	2.420	3.529	1.529	1.265	1.038
45	\$39.20	\$49.00	1.000	1.630	2.300	2.400	1.413	1.000	2.342	3.444	1.543	1.271	1.040
46	\$40.80	\$51.00	1.000	1.612	2.280	2.380	1.404	1.000	2.219	3.310	1.558	1.276	1.042
47	\$42.40	\$53.00	1.000	1.594	2.260	2.360	1.395	1.000	2.102	3.184	1.572	1.282	1.044
48	\$44.00	\$55.00	1.000	1.583	2.240	2.340	1.386	1.000	1.990	3.063	1.586	1.287	1.046
49	\$45.60	\$57.00	1.000	1.571	2.220	2.320	1.377	1.000	1.921	3.009	1.601	1.293	1.048
50	\$47.20	\$59.00	1.000	1.559	2.200	2.300	1.368	1.000	1.851	2.997	1.615	1.298	1.050
51	\$48.80	\$61.00	1.000	1.547	2.180	2.280	1.359	1.000	1.841	2.948	1.629	1.304	1.052
52	\$50.40	\$63.00	1.000	1.535	2.160	2.260	1.350	1.000	1.831	2.898	1.643	1.309	1.054
53	\$52.00	\$65.00	1.000	1.526	2.140	2.240	1.341	1.000	1.852	2.896	1.658	1.315	1.056
54	\$53.60	\$67.00	1.000	1.517	2.120	2.220	1.332	1.000	1.869	2.887	1.672	1.320	1.058
55	\$55.20	\$69.00	1.000	1.508	2.100	2.200	1.323	1.000	1.884	2.873	1.686	1.326	1.060
56	\$56.80	\$71.00	1.000	1.499	2.080	2.180	1.314	1.000	1.819	2.729	1.701	1.331	1.062
57	\$58.40	\$73.00	1.000	1.493	2.020	2.160	1.305	1.000	1.762	2.597	1.715	1.337	1.064
58	\$60.00	\$75.00	1.000	1.487	1.980	2.140	1.296	1.000	1.709	2.475	1.729	1.342	1.066
59	\$61.60	\$77.00	1.000	1.481	1.940	2.120	1.287	1.000	1.683	2.393	1.744	1.348	1.068
60	\$75.20	\$94.00	1.000	1.475	1.900	2.100	1.278	1.000	1.657	2.312	1.758	1.353	1.070
61	\$84.80	\$106.00	1.000	1.469	1.880	2.080	1.269	1.000	1.685	2.303	1.772	1.359	1.072
62	\$94.40	\$118.00	1.000	1.466	1.860	2.060	1.260	1.000	1.702	2.279	1.786	1.364	1.074
63	\$100.80	\$126.00	1.000	1.463	1.840	2.040	1.251	1.000	1.694	2.219	1.801	1.370	1.076
64	\$105.60	\$132.00	1.000	1.460	1.820	2.020	1.242	1.000	1.710	2.189	1.815	1.375	1.078
65	\$110.40	\$138.00	1.000	1.457	1.800	2.000	1.233	1.000	1.722	2.152	1.844	1.386	1.080
66	\$130.40	\$163.00	1.000	1.454	1.780	1.950	1.224	1.000	1.705	2.119	1.872	1.397	1.082
67	\$150.40	\$188.00	1.000	1.451	1.760	1.900	1.215	1.000	1.684	2.081	1.901	1.408	1.084
68	\$161.60	\$202.00	1.000	1.445	1.740	1.850	1.206	1.000	1.676	2.058	1.929	1.419	1.086
69	\$172.80	\$216.00	1.000	1.439	1.720	1.800	1.197	1.000	1.664	2.031	1.958	1.430	1.088
70	\$184.00	\$230.00	1.000	1.436	1.700	1.750	1.188	1.000	1.650	2.000	1.987	1.441	1.090
71	\$211.20	\$264.00	1.000	1.433	1.680	1.700	1.179	1.000	1.630	1.950	2.015	1.452	1.092
72	\$238.40	\$298.00	1.000	1.430	1.660	1.650	1.170	1.000	1.610	1.900	2.044	1.463	1.094
73	\$265.60	\$332.00	1.000	1.420	1.640	1.600	1.161	1.000	1.590	1.850	2.072	1.474	1.096
74	\$292.80	\$366.00	1.000	1.410	1.620	1.550	1.152	1.000	1.570	1.800	2.101	1.485	1.098
75	\$320.00	\$400.00	1.000	1.400	1.600	1.500	1.143	1.000	1.550	1.800	2.115	1.491	1.100
76	\$371.20	\$464.00	1.000	1.390	1.580	1.480	1.134	1.000	1.530	1.770	2.130	1.496	1.102
77	\$422.40	\$528.00	1.000	1.380	1.560	1.460	1.125	1.000	1.510	1.740	2.144	1.502	1.104
78	\$473.60	\$592.00	1.000	1.370	1.540	1.440	1.116	1.000	1.490	1.710	2.158	1.507	1.106
79	\$524.80	\$656.00	1.000	1.360	1.520	1.420	1.107	1.000	1.470	1.680	2.173	1.513	1.108
80	\$576.00	\$720.00	1.000	1.350	1.500	1.400	1.098	1.000	1.450	1.650	2.187	1.518	1.110
81	\$627.20	\$784.00	1.000	1.340	1.490	1.380	1.089	1.000	1.430	1.630	2.201	1.524	1.112
82	\$678.40	\$848.00	1.000	1.330	1.480	1.360	1.080	1.000	1.410	1.610	2.215	1.529	1.114
83	\$739.20	\$924.00	1.000	1.320	1.470	1.340	1.071	1.000	1.390	1.590	2.230	1.535	1.116
84	\$800.00	\$1,000.00	1.000	1.310	1.460	1.320	1.062	1.000	1.370	1.570	2.244	1.540	1.118

Multi-Life Discounts		Factor
Employer or Association Iss Age < 65		0.850
Employer or Association Iss Age >= 65		0.900
Home Office and Career Agents Iss Age < 65		0.800
Home Office and Career Agents Iss Age >= 65		0.850
Individual Underwriting Classes		Factor
Ultra Preferred		0.800
Preferred		1.000
Standard		1.250
Joint Policy Factor		Factor
		1.500
Joint Risk Class		Factor
2 Ultra Preferred		0.800
1 Ultra Preferred and 1 Preferred		0.900
1 Ultra Preferred and 1 Standard		1.025
2 Preferred		1.000
1 Preferred and 1 Standard		1.125
2 Standard		1.250
Benefit Type		Factor
Daily Reimbursement		1.000
Home and Community Based Services (HCBS)		1.030
Enhancement Rider		1.200
Indemnity Rider		1.200
Caregiver Indemnity Rider		2.000
Elimination Period		Factor
0 Day		1.300
30 Day		1.150
60 Day		1.000
90 Day		1.000
180 Day		1.000
Benefit Period		Factor
3 Year		0.650
4 Year		N/A
5 Year		N/A
6 Year		0.900
10 Year		N/A
Lifetime		1.000
Payment Mode		Factor
Annual		1.000
Semi-Annual		0.520
Quarterly		0.270
Monthly - Pre-Authorized Check		0.085
Discounted Renewal Premium Factor		Factor
		0.750

Massachusetts Mutual Life Insurance Company
1295 State Street, Springfield, MA 01111
400 Series
Current Premium Rates

Issue Age	Annual Base Rates		Premium Factors											
	per \$10 of Daily Benefit Amount	per \$10 of Daily Benefit Amount	Lifetime Pay Inflation Protection			Limited Pay		Limited Pay Inflation Protection			Nonforfeiture		HCBS	Paid-Up
	Facility Only	Comprehensive	None	5% Simple	5% Compound	10 Year	20 Year	None	5% Simple	5% Compound	Full	Shortened BP	Prem Wvvr	Survivor
18	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
19	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
20	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
21	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
22	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
23	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
24	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
25	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
26	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
27	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
28	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
29	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
30	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
31	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
32	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
33	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
34	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
35	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
36	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
37	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
38	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
39	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
40	\$44.00	\$55.00	1.000	2.807	3.850	3.000	1.900	1.000	3.493	4.950	1.800	1.243	1.030	1.400
41	\$44.80	\$56.00	1.000	2.746	3.786	2.960	1.880	1.000	3.386	4.829	1.810	1.249	1.032	1.400
42	\$45.60	\$57.00	1.000	2.685	3.723	2.920	1.860	1.000	3.279	4.709	1.820	1.254	1.034	1.400
43	\$46.40	\$58.00	1.000	2.625	3.660	2.880	1.840	1.000	3.172	4.589	1.830	1.260	1.036	1.400
44	\$47.20	\$59.00	1.000	2.564	3.597	2.840	1.820	1.000	3.065	4.469	1.840	1.265	1.038	1.400
45	\$48.00	\$60.00	1.000	2.505	3.534	2.800	1.800	1.000	2.958	4.350	1.850	1.271	1.040	1.400
46	\$49.60	\$62.00	1.000	2.416	3.418	2.760	1.780	1.000	2.837	4.232	1.870	1.276	1.042	1.400
47	\$51.20	\$64.00	1.000	2.329	3.302	2.720	1.760	1.000	2.716	4.114	1.890	1.282	1.044	1.400
48	\$52.80	\$66.00	1.000	2.252	3.186	2.680	1.740	1.000	2.596	3.996	1.910	1.287	1.046	1.400
49	\$54.40	\$68.00	1.000	2.173	3.071	2.640	1.720	1.000	2.476	3.879	1.930	1.293	1.048	1.400
50	\$56.00	\$70.00	1.000	2.095	2.956	2.600	1.700	1.000	2.324	3.763	1.950	1.298	1.050	1.400
51	\$58.40	\$73.00	1.000	2.055	2.896	2.560	1.680	1.000	2.277	3.647	1.970	1.304	1.052	1.400
52	\$60.80	\$76.00	1.000	2.015	2.836	2.520	1.660	1.000	2.231	3.531	1.990	1.309	1.054	1.400
53	\$63.20	\$79.00	1.000	1.979	2.776	2.480	1.640	1.000	2.185	3.416	2.010	1.315	1.056	1.400
54	\$65.60	\$82.00	1.000	1.943	2.716	2.440	1.620	1.000	2.137	3.302	2.030	1.320	1.058	1.400
55	\$68.00	\$85.00	1.000	1.907	2.656	2.400	1.600	1.000	2.090	3.188	2.050	1.326	1.060	1.400
56	\$73.60	\$92.00	1.000	1.890	2.597	2.360	1.580	1.000	2.049	3.074	2.070	1.331	1.062	1.400
57	\$79.20	\$99.00	1.000	1.876	2.538	2.320	1.560	1.000	2.009	2.961	2.090	1.337	1.064	1.400
58	\$84.80	\$106.00	1.000	1.862	2.479	2.280	1.540	1.000	1.967	2.849	2.110	1.342	1.066	1.400
59	\$90.40	\$113.00	1.000	1.848	2.421	2.240	1.520	1.000	1.925	2.737	2.130	1.348	1.068	1.400
60	\$96.00	\$120.00	1.000	1.834	2.363	2.200	1.500	1.000	1.881	2.625	2.150	1.353	1.070	1.400
61	\$103.20	\$129.00	1.000	1.801	2.305	2.160	1.480	1.000	1.878	2.566	2.170	1.359	1.072	1.400
62	\$110.40	\$138.00	1.000	1.771	2.247	2.120	1.460	1.000	1.873	2.508	2.190	1.364	1.074	1.400
63	\$117.60	\$147.00	1.000	1.741	2.189	2.080	1.440	1.000	1.870	2.450	2.210	1.370	1.076	1.400
64	\$124.80	\$156.00	1.000	1.710	2.132	2.040	1.420	1.000	1.869	2.392	2.230	1.375	1.078	1.400
65	\$132.00	\$165.00	1.000	1.680	2.075	2.000	1.400	1.000	1.868	2.334	2.250	1.386	1.080	1.400
66	\$148.80	\$186.00	1.000	1.649	2.018	1.950	1.390	1.000	1.832	2.277	2.280	1.397	1.082	1.390
67	\$165.60	\$207.00	1.000	1.617	1.962	1.900	1.380	1.000	1.796	2.220	2.310	1.408	1.084	1.380
68	\$182.40	\$228.00	1.000	1.582	1.906	1.850	1.370	1.000	1.762	2.163	2.340	1.419	1.086	1.370
69	\$199.20	\$249.00	1.000	1.547	1.850	1.800	1.360	1.000	1.726	2.106	2.370	1.430	1.088	1.360
70	\$216.00	\$270.00	1.000	1.515	1.794	1.750	1.350	1.000	1.691	2.050	2.400	1.441	1.090	1.350
71	\$244.80	\$306.00	1.000	1.500	1.759	1.700	1.340	1.000	1.675	2.004	2.430	1.452	1.092	1.340
72	\$273.60	\$342.00	1.000	1.485	1.724	1.650	1.330	1.000	1.660	1.958	2.460	1.463	1.094	1.330
73	\$302.40	\$378.00	1.000	1.463	1.689	1.600	1.320	1.000	1.644	1.913	2.490	1.474	1.096	1.320
74	\$331.20	\$414.00	1.000	1.440	1.655	1.550	1.310	1.000	1.629	1.868	2.520	1.485	1.098	1.310
75	\$360.00	\$450.00	1.000	1.418	1.620	1.500	1.300	1.000	1.569	1.823	2.550	1.491	1.100	1.300
76	\$412.80	\$516.00	1.000	1.404	1.596	1.480	1.290	1.000	1.545	1.788	2.580	1.496	1.102	1.300
77	\$465.60	\$582.00	1.000	1.390	1.572	1.460	1.280	1.000	1.521	1.753	2.610	1.502	1.104	1.300
78	\$518.40	\$648.00	1.000	1.377	1.548	1.440	1.270	1.000	1.498	1.719	2.640	1.507	1.106	1.300
79	\$571.20	\$714.00	1.000	1.363	1.524	1.420	1.260	1.000	1.474	1.684	2.670	1.513	1.108	1.300
80	\$624.00	\$780.00	1.000	1.350	1.500	1.400	1.250	1.000	1.450	1.650	2.700	1.518	1.110	1.300
81	\$676.80	\$846.00	1.000	1.340	1.490	1.380	1.240	1.000	1.430	1.630	2.730	1.524	1.112	1.300
82	\$729.60	\$912.00	1.000	1.330	1.480	1.360	1.230	1.000	1.410	1.610	2.760	1.529	1.114	1.300
83	\$782.40	\$978.00	1.000	1.320	1.470	1.340	1.220	1.000	1.390	1.590	2.790	1.535	1.116	1.300
84	\$835.20	\$1,044.00	1.000	1.310	1.460	1.320	1.210	1.000	1.370	1.570	2.820	1.540	1.118	1.300

Discounts	Factor
Multi-Life	0.900

Individual Underwriting Classes	Factor
Ultra Preferred	0.750
Preferred	1.000
Standard	1.250

Joint Policy Factor	1.300
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Joint Risk Class	Factor
2 Ultra Preferred	0.750
1 Ultra Preferred and 1 Preferred	0.875
1 Ultra Preferred and 1 Standard	1.000
2 Preferred	1.000
1 Preferred and 1 Standard	1.125
2 Standard	1.250

Benefit Type	Factor
Daily Reimbursement	1.000
Monthly Home and Community Based Services (HCBS) Rider	1.120
Indemnity Rider	1.150

		Elimination Period Rider	
Elimination Period	Factor	Enhanced EP	HCBS First Day Coverage
0 Day	1.300	N/A	1.000
30 Day	1.150	N/A	1.080
60 Day	1.000	N/A	1.160
90 Day	1.000	N/A	1.160
180 Day	0.900	N/A	1.200

		Rider	
Benefit Period	Premium Factor	Restoration of Benefits	Limited Family Care Giver
3 Year	0.630	1.063	1.200
4 Year	0.780	1.051	1.150
5 Year	0.850	1.047	1.120
6 Year	0.880	1.034	1.100
10 Year	0.950	1.011	1.100
Lifetime	1.000	N/A	1.100

Payment Mode	Factor
Annual	1.000
Semi-Annual	0.520
Quarterly	0.270
Monthly - Pre-Authorized Check	0.088

Discounted Renewal Premium Factor	0.750
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Massachusetts Mutual Life Insurance Company
1295 State Street, Springfield, MA 01111
500 Series
Current Premium Rates

Issue Age	Annual Base Rates		Premium Factors																
	per \$10 of Daily Benefit Amount	Facility Only	Inflation Protection				10 Year Paid Up				Paid Up at 65				Nonforfeiture Shortened BP	Return of Premium Less Claims	Full	Cov Part Prem Waiv	Paid-Up Survivor
			None	5% Simple	3% Compound	5% Compound	None	5% Simple	3% Compound	5% Compound	None	5% Simple	3% Compound	5% Compound					
18	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
19	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
20	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
21	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
22	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
23	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
24	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
25	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
26	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
27	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
28	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
29	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
30	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
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32	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
33	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
34	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
35	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
36	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
37	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
38	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
39	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
40	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086
41	\$76.30	\$89.80	1.000	1.666	1.901	2.604	2.897	3.008	3.045	3.143	1.595	1.660	1.680	1.730	1.316	1.240	1.490	1.020	1.088
42	\$76.80	\$90.40	1.000	1.673	1.898	2.598	2.878	2.987	3.019	3.116	1.610	1.675	1.693	1.745	1.310	1.255	1.510	1.020	1.090
43	\$77.40	\$91.00	1.000	1.680	1.889	2.593	2.859	2.966	2.997	3.090	1.650	1.715	1.731	1.784	1.302	1.272	1.543	1.020	1.094
44	\$77.90	\$91.70	1.000	1.687	1.877	2.587	2.840	2.945	2.975	3.063	1.690	1.755	1.770	1.823	1.294	1.289	1.576	1.020	1.098
45	\$78.50	\$92.30	1.000	1.695	1.868	2.581	2.821	2.924	2.953	3.037	1.730	1.795	1.809	1.862	1.286	1.306	1.609	1.020	1.102
46	\$79.10	\$93.00	1.000	1.702	1.857	2.576	2.803	2.903	2.931	3.011	1.770	1.835	1.850	1.901	1.278	1.323	1.642	1.020	1.106
47	\$79.60	\$93.60	1.000	1.709	1.848	2.570	2.785	2.883	2.909	3.085	1.810	1.875	1.891	1.940	1.270	1.340	1.675	1.020	1.110
48	\$80.20	\$94.30	1.000	1.716	1.848	2.564	2.766	2.863	2.881	3.060	1.886	1.952	1.962	2.017	1.260	1.360	1.729	1.020	1.116
49	\$80.70	\$94.90	1.000	1.724	1.850	2.558	2.748	2.842	2.854	3.234	1.962	2.029	2.036	2.094	1.250	1.380	1.783	1.020	1.122
50	\$81.30	\$95.60	1.000	1.731	1.850	2.553	2.730	2.822	2.827	3.209	2.038	2.106	2.113	2.171	1.240	1.400	1.837	1.020	1.128
51	\$82.80	\$97.40	1.000	1.744	1.829	2.528	2.700	2.789	2.800	3.271	2.114	2.183	2.192	2.248	1.230	1.420	1.891	1.020	1.134
52	\$84.30	\$99.20	1.000	1.758	1.809	2.504	2.671	2.755	2.774	3.233	2.190	2.260	2.275	2.325	1.220	1.440	1.945	1.020	1.140
53	\$85.90	\$101.10	1.000	1.772	1.833	2.480	2.642	2.722	2.725	3.275	2.275	2.345	2.367	2.418	1.210	1.468	2.034	1.020	1.145
54	\$87.50	\$102.90	1.000	1.785	1.859	2.457	2.614	2.690	2.676	3.275	2.453	2.525	2.505	2.590	1.204	1.496	2.123	1.020	1.150
55	\$89.20	\$104.90	1.000	1.799	1.883	2.433	2.585	2.658	2.629	3.272	2.585	2.658	2.629	2.722	1.196	1.524	2.212	1.020	1.155
56	\$95.00	\$111.80	1.000	1.793	1.824	2.390	2.521	2.590	2.582	3.251	N/A	N/A	N/A	N/A	1.188	1.552	2.301	1.020	1.160
57	\$101.40	\$119.30	1.000	1.787	1.765	2.348	2.458	2.524	2.536	3.252	N/A	N/A	N/A	N/A	1.180	1.580	2.390	1.020	1.165
58	\$108.10	\$127.20	1.000	1.782	1.748	2.306	2.397	2.459	2.468	3.251	N/A	N/A	N/A	N/A	1.172	1.617	2.551	1.020	1.171
59	\$115.30	\$135.60	1.000	1.776	1.732	2.265	2.338	2.396	2.401	3.250	N/A	N/A	N/A	N/A	1.164	1.654	2.712	1.020	1.177
60	\$122.90	\$144.60	1.000	1.770	1.715	2.225	2.280	2.335	2.337	3.286	N/A	N/A	N/A	N/A	1.156	1.691	2.873	1.021	1.183
61	\$132.60	\$156.00	1.000	1.746	1.679	2.176	2.217	2.269	2.274	3.317	N/A	N/A	N/A	N/A	1.148	1.728	3.034	1.023	1.189
62	\$143.10	\$168.30	1.000	1.722	1.643	2.128	2.155	2.206	2.213	3.250	N/A	N/A	N/A	N/A	1.140	1.765	3.195	1.025	1.195
63	\$154.40	\$181.60	1.000	1.699	1.628	2.081	2.096	2.144	2.146	3.284	N/A	N/A	N/A	N/A	1.134	1.817	3.569	1.028	1.200
64	\$166.40	\$195.80	1.000	1.676	1.615	2.035	2.038	2.083	2.081	3.212	N/A	N/A	N/A	N/A	1.128	1.869	3.943	1.031	1.205
65	\$179.60	\$211.30	1.000	1.653	1.600	1.990	1.981	2.025	2.018	3.209	N/A	N/A	N/A	N/A	1.122	1.921	4.317	1.034	1.210
66	\$198.20	\$233.20	1.000	1.634	1.550	1.939	1.917	1.958	1.956	3.190	N/A	N/A	N/A	N/A	1.116	1.973	N/A	1.037	1.215
67	\$218.80	\$257.40	1.000	1.614	1.502	1.889	1.855	1.893	1.897	3.123	N/A	N/A	N/A	N/A	1.110	2.025	N/A	1.040	1.220
68	\$241.50	\$284.10	1.000	1.595	1.489	1.841	1.794	1.831	1.836	3.159	N/A	N/A	N/A	N/A	1.104	2.101	N/A	1.046	1.222
69	\$266.60	\$313.60	1.000	1.576	1.475	1.794	1.736	1.770	1.776	3.196	N/A	N/A	N/A	N/A	1.098	2.177	N/A	1.052	1.224
70	\$294.20	\$346.10	1.000	1.558	1.462	1.748	1.680	1.712	1.719	3.176	N/A	N/A	N/A	N/A	1.092	2.253	N/A	1.058	1.226
71	\$328.10	\$386.00	1.000	1.545	1.434	1.712	1.629	1.659	1.663	3.162	N/A	N/A	N/A	N/A	1.086	2.329	N/A	1.064	1.228
72	\$366.00	\$430.60	1.000	1.532	1.406	1.677	1.580	1.607	1.609	3.129	N/A	N/A	N/A	N/A	1.080	2.405	N/A	1.070	1.230
73	\$408.20	\$480.20	1.000	1.519	1.375	1.643	1.532	1.557	1.569	3.157	N/A	N/A	N/A	N/A	1.076	2.521	N/A	1.078	1.230
74	\$455.30	\$535.70	1.000	1.506	1.344	1.609	1.486	1.509	1.530	3.129	N/A	N/A	N/A	N/A	1.072	2.637	N/A	1.086	1.230
75	\$507.90	\$597.50	1.000	1.493	1.314	1.576	1.441	1.462	1.492	3.142	N/A	N/A	N/A	N/A	1.068	2.753	N/A	1.094	1.230
76	\$544.80	\$640.90	1.000	1.488	1.335	1.561	1.421	1.440	1.454	3.157	N/A	N/A	N/A	N/A	1.064	2.869	N/A	1.102	1.230
77	\$584.50	\$687.60	1.000	1.483	1.357	1.547	1.401	1.418	1.418	3.142	N/A	N/A	N/A	N/A	1.060	2.985	N/A	1.110	1.230
78	\$627.00	\$737.60	1.000	1.478	1.344	1.533	1.382	1.396	1.400	3.148	N/A	N/A	N/A	N/A	1.058	3.170	N/A	1.119	1.230

Massachusetts Mutual Life Insurance Company
1295 State Street, Springfield, MA 01111
511 Series
Current Premium Rates

Issue Age	Annual Base Rates		Premium Factors										
	per \$10 of Daily Benefit Amount		Inflation Protection			Limited Pay		Nonforfeiture		Return of Premium		Cov Part Prem Waiv	Paid-Up Survivor
	Facility Only	Comprehensive	None	3% Compound	5% Compound	10 Yr	To 65	Shortened BP	Less Claims	Full			
18	\$59.36	\$69.84	1.000	2.333	6.256	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
19	\$59.36	\$69.84	1.000	2.333	6.195	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
20	\$59.36	\$69.84	1.000	2.333	6.135	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
21	\$59.36	\$69.84	1.000	2.333	6.075	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
22	\$59.36	\$69.84	1.000	2.333	6.016	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
23	\$59.36	\$69.84	1.000	2.333	5.957	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
24	\$59.36	\$69.84	1.000	2.333	5.899	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
25	\$59.36	\$69.84	1.000	2.333	5.842	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
26	\$59.36	\$69.84	1.000	2.333	5.785	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
27	\$59.36	\$69.84	1.000	2.333	5.728	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
28	\$59.36	\$69.84	1.000	2.333	5.673	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
29	\$59.36	\$69.84	1.000	2.333	5.617	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
30	\$59.36	\$69.84	1.000	2.333	5.563	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
31	\$59.36	\$69.84	1.000	2.333	5.508	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
32	\$59.36	\$69.84	1.000	2.333	5.455	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
33	\$59.36	\$69.84	1.000	2.333	5.401	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
34	\$59.36	\$69.84	1.000	2.333	5.349	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
35	\$59.36	\$69.84	1.000	2.333	5.296	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
36	\$59.36	\$69.84	1.000	2.333	5.245	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
37	\$59.36	\$69.84	1.000	2.333	5.193	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
38	\$59.36	\$69.84	1.000	2.333	5.143	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
39	\$59.36	\$69.84	1.000	2.333	5.092	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
40	\$59.36	\$69.84	1.000	2.333	5.043	3.269	1.811	1.100	1.250	1.470	1.010	1.065	
41	\$61.66	\$72.54	1.000	2.267	4.808	3.269	1.811	1.100	1.240	1.490	1.010	1.068	
42	\$64.05	\$75.35	1.000	2.203	4.583	3.269	1.811	1.100	1.255	1.510	1.010	1.070	
43	\$66.90	\$78.70	1.000	2.156	4.412	3.221	1.856	1.100	1.272	1.543	1.010	1.072	
44	\$69.74	\$82.05	1.000	2.112	4.254	3.173	1.901	1.100	1.289	1.576	1.010	1.074	
45	\$72.58	\$85.39	1.000	2.072	4.110	3.126	1.946	1.100	1.306	1.609	1.010	1.076	
46	\$75.43	\$88.74	1.000	2.035	3.975	3.079	1.990	1.100	1.323	1.642	1.010	1.078	
47	\$78.28	\$92.09	1.000	2.001	3.851	3.033	2.033	1.100	1.340	1.675	1.010	1.080	
48	\$81.12	\$95.44	1.000	1.969	3.736	2.991	2.115	1.100	1.360	1.729	1.010	1.084	
49	\$83.96	\$98.78	1.000	1.940	3.629	2.950	2.196	1.100	1.380	1.783	1.010	1.088	
50	\$86.81	\$102.13	1.000	1.912	3.528	2.909	2.277	1.100	1.400	1.837	1.010	1.092	
51	\$89.65	\$105.47	1.000	1.886	3.434	2.869	2.356	1.100	1.420	1.891	1.010	1.096	
52	\$92.50	\$108.82	1.000	1.862	3.346	2.829	2.435	1.100	1.440	1.945	1.010	1.100	
53	\$96.76	\$113.84	1.000	1.841	3.257	2.779	2.521	1.100	1.468	2.034	1.010	1.104	
54	\$101.04	\$118.87	1.000	1.821	3.176	2.730	2.604	1.100	1.496	2.123	1.010	1.108	
55	\$105.31	\$123.89	1.000	1.803	3.102	2.684	2.684	1.100	1.524	2.212	1.010	1.112	
56	\$109.58	\$128.92	1.000	1.786	3.033	2.639	N/A	1.100	1.552	2.301	1.010	1.116	
57	\$113.85	\$133.94	1.000	1.771	2.969	2.595	N/A	1.100	1.580	2.390	1.010	1.120	
58	\$123.81	\$145.66	1.000	1.717	2.822	2.527	N/A	1.100	1.617	2.551	1.010	1.124	
59	\$133.77	\$157.38	1.000	1.672	2.697	2.463	N/A	1.100	1.654	2.712	1.010	1.128	
60	\$143.74	\$169.11	1.000	1.632	2.589	2.403	N/A	1.100	1.691	2.873	1.010	1.132	
61	\$153.71	\$180.83	1.000	1.598	2.495	2.346	N/A	1.100	1.728	3.034	1.010	1.136	
62	\$163.67	\$192.55	1.000	1.568	2.413	2.293	N/A	1.100	1.765	3.195	1.010	1.140	
63	\$180.03	\$211.80	1.000	1.531	2.320	2.205	N/A	1.100	1.817	3.569	1.012	1.142	
64	\$196.39	\$231.05	1.000	1.501	2.243	2.126	N/A	1.100	1.869	3.943	1.014	1.144	
65	\$212.76	\$250.31	1.000	1.475	2.177	2.054	N/A	1.100	1.921	4.317	1.016	1.146	
66	\$229.13	\$269.56	1.000	1.452	2.121	1.990	N/A	1.100	1.973	N/A	1.018	1.148	
67	\$245.49	\$288.81	1.000	1.433	2.072	1.931	N/A	1.100	2.025	N/A	1.020	1.150	
68	\$279.64	\$328.99	1.000	1.394	1.974	1.852	N/A	1.100	2.101	N/A	1.022	1.150	
69	\$313.80	\$369.18	1.000	1.364	1.898	1.784	N/A	1.100	2.177	N/A	1.024	1.150	
70	\$347.96	\$409.36	1.000	1.340	1.837	1.725	N/A	1.100	2.253	N/A	1.026	1.150	
71	\$382.12	\$449.55	1.000	1.320	1.786	1.674	N/A	1.100	2.329	N/A	1.028	1.150	
72	\$416.27	\$489.73	1.000	1.303	1.744	1.629	N/A	1.100	2.405	N/A	1.030	1.150	
73	\$474.61	\$558.37	1.000	1.283	1.702	1.581	N/A	1.100	2.521	N/A	1.036	1.150	
74	\$532.97	\$627.02	1.000	1.268	1.669	1.542	N/A	1.100	2.637	N/A	1.042	1.150	
75	\$591.31	\$695.66	1.000	1.256	1.643	1.509	N/A	1.100	2.753	N/A	1.048	1.150	
76	\$649.66	\$764.31	1.000	1.245	1.621	1.482	N/A	1.100	2.869	N/A	1.054	1.150	
77	\$708.01	\$832.95	1.000	1.237	1.603	1.458	N/A	1.100	2.985	N/A	1.060	1.150	
78	\$801.23	\$942.62	1.000	1.227	1.584	1.414	N/A	1.100	3.170	N/A	1.066	1.150	
79	\$894.45	\$1,052.29	1.000	1.219	1.569	1.378	N/A	1.100	3.355	N/A	1.072	1.150	
80	\$987.67	\$1,161.96	1.000	1.212	1.557	1.348	N/A	1.100	3.541	N/A	1.078	1.150	
81	\$1,080.89	\$1,271.63	1.000	1.207	1.547	1.323	N/A	1.100	3.726	N/A	1.084	1.150	
82	\$1,174.11	\$1,381.30	1.000	1.202	1.539	1.302	N/A	1.100	3.911	N/A	1.090	1.150	
83	\$1,267.32	\$1,490.97	1.000	1.198	1.532	1.284	N/A	1.100	4.361	N/A	1.096	1.150	
84	\$1,360.54	\$1,600.64	1.000	1.195	1.526	1.268	N/A	1.100	4.811	N/A	1.102	1.150	

Discounts	Factor
Single Partner	1.000
Partner	0.850
Covered Partner	0.700
Multi-Product	0.950
Multi-Life	0.900

Individual Underwriting Classes	Factor
Ultra Preferred	0.900
Select Preferred	1.000
Preferred	1.250
Standard Plus	2.500
Standard	5.000

Benefit Type	Factor
Daily Reimbursement	1.000
Monthly Home and Community Based Services (HCBS) Rider	1.045

Elimination Period	Factor	Elimination Period Riders	
		Enhanced EP	HCBS EP Waiver
0 Day	N/A	N/A	N/A
30 Day	1.200	1.030	1.070
60 Day	1.100	1.045	1.110
90 Day	1.000	1.060	1.160
180 Day	0.900	1.075	1.250

Benefit Period	Premium Factor	Rider	
		Restoration of Benefits	Shared Care
1 Year	N/A	N/A	N/A
1.5 Year	N/A	N/A	N/A
2 Year	0.447	1.040	1.300
3 Year	0.524	1.040	1.260
4 Year	0.588	1.040	1.260
5 Year	0.635	1.040	1.280
6 Year	0.670	1.040	1.300
10 Year	0.857	1.040	1.090
Lifetime	1.000	N/A	N/A

Payment Mode	Factor
Annual	1.000
Semi-Annual	0.520
Quarterly	0.265
Monthly - Pre-Authorized Check	0.088

Massachusetts Mutual Life Insurance Company
1295 State Street, Springfield, MA 01111
200 Series
Proposed Premium Rates*

Issue Age	Annual Base Rates			Premium Factors										
	per \$10 of Daily Benefit Amount			Lifetime Pay Inflation Protection			Limited Pay		Limited Pay Inflation Protection			Nonforfeiture		HCBS
	Facility Only	Comprehensive		None	5% Simple	5% Compound	10 Year	20 Year	None	5% Simple	5% Compound	Full	Shortened BP	Prem Wvr
18	\$77.79	\$85.43	1.000	2.056	6.480	3.269	2.070	1.000	2.056	6.480	1.800	1.119	1.030	
19	\$77.79	\$85.43	1.000	2.056	6.446	3.269	2.070	1.000	2.056	6.446	1.800	1.119	1.030	
20	\$77.79	\$85.43	1.000	2.056	6.411	3.269	2.070	1.000	2.056	6.411	1.800	1.118	1.030	
21	\$77.79	\$85.43	1.000	2.056	6.377	3.269	2.070	1.000	2.056	6.377	1.800	1.118	1.030	
22	\$77.79	\$85.43	1.000	2.056	6.343	3.269	2.070	1.000	2.056	6.343	1.800	1.117	1.030	
23	\$77.79	\$85.43	1.000	2.056	6.302	3.269	2.070	1.000	2.056	6.302	1.800	1.116	1.030	
24	\$77.79	\$85.43	1.000	2.056	6.261	3.269	2.070	1.000	2.056	6.261	1.800	1.115	1.030	
25	\$77.79	\$85.43	1.000	2.056	6.220	3.269	2.070	1.000	2.056	6.220	1.800	1.115	1.030	
26	\$77.79	\$85.43	1.000	2.056	6.179	3.269	2.070	1.000	2.056	6.179	1.800	1.114	1.030	
27	\$77.79	\$85.43	1.000	2.056	6.138	3.269	2.070	1.000	2.056	6.138	1.800	1.113	1.030	
28	\$77.79	\$85.43	1.000	2.056	6.101	3.269	2.070	1.000	2.056	6.101	1.800	1.112	1.030	
29	\$77.79	\$85.43	1.000	2.056	6.065	3.269	2.070	1.000	2.056	6.065	1.800	1.112	1.030	
30	\$77.79	\$85.43	1.000	2.056	6.028	3.269	2.070	1.000	2.056	6.028	1.800	1.111	1.030	
31	\$77.79	\$85.43	1.000	2.056	5.992	3.269	2.070	1.000	2.056	5.992	1.800	1.111	1.030	
32	\$77.79	\$85.43	1.000	2.056	5.955	3.269	2.070	1.000	2.056	5.955	1.800	1.110	1.030	
33	\$77.79	\$85.43	1.000	2.056	5.923	3.269	2.070	1.000	2.056	5.923	1.800	1.109	1.030	
34	\$77.79	\$85.43	1.000	2.056	5.890	3.269	2.070	1.000	2.056	5.890	1.800	1.108	1.030	
35	\$77.79	\$85.43	1.000	2.056	5.858	3.269	2.070	1.000	2.056	5.858	1.800	1.107	1.030	
36	\$77.79	\$85.43	1.000	2.056	5.825	3.269	2.070	1.000	2.056	5.825	1.800	1.106	1.030	
37	\$77.79	\$85.43	1.000	2.056	5.793	3.269	2.070	1.000	2.056	5.793	1.800	1.105	1.030	
38	\$79.02	\$86.78	1.000	2.047	5.677	3.269	2.070	1.000	2.047	5.677	1.800	1.104	1.030	
39	\$80.25	\$88.13	1.000	2.038	5.561	3.269	2.070	1.000	2.038	5.561	1.800	1.103	1.030	
40	\$81.47	\$89.47	1.000	2.029	5.445	3.269	2.070	1.000	2.029	5.445	1.800	1.103	1.030	
41	\$82.70	\$90.64	1.000	2.033	5.329	3.269	2.076	1.000	2.033	5.329	1.810	1.102	1.032	
42	\$83.93	\$91.81	1.000	2.036	5.213	3.269	2.082	1.000	2.036	5.213	1.820	1.101	1.034	
43	\$86.00	\$93.89	1.000	2.044	5.106	3.221	2.057	1.000	2.044	5.106	1.830	1.101	1.036	
44	\$88.06	\$95.96	1.000	2.056	4.999	3.173	2.033	1.000	2.056	4.999	1.840	1.101	1.038	
45	\$90.12	\$98.02	1.000	2.066	4.892	3.126	2.009	1.000	2.066	4.892	1.850	1.100	1.040	
46	\$92.18	\$100.07	1.000	2.076	4.785	3.079	1.985	1.000	2.076	4.785	1.870	1.100	1.042	
47	\$94.25	\$102.12	1.000	2.085	4.678	3.033	1.962	1.000	2.085	4.678	1.890	1.100	1.044	
48	\$97.32	\$105.24	1.000	2.069	4.549	2.991	1.941	1.000	2.069	4.549	1.910	1.100	1.046	
49	\$100.39	\$108.35	1.000	2.052	4.419	2.950	1.921	1.000	2.052	4.419	1.930	1.100	1.048	
50	\$103.46	\$111.46	1.000	2.036	4.290	2.909	1.902	1.000	2.036	4.290	1.950	1.100	1.050	
51	\$106.53	\$114.55	1.000	2.049	4.160	2.869	1.882	1.000	2.049	4.160	1.970	1.100	1.052	
52	\$109.60	\$117.62	1.000	2.063	4.031	2.829	1.863	1.000	2.063	4.031	1.990	1.100	1.054	
53	\$115.15	\$123.35	1.000	2.009	3.889	2.779	1.837	1.000	2.009	3.889	2.010	1.100	1.056	
54	\$120.70	\$129.05	1.000	1.954	3.748	2.730	1.812	1.000	1.954	3.748	2.030	1.100	1.058	
55	\$126.25	\$134.73	1.000	1.903	3.606	2.684	1.789	1.000	1.903	3.606	2.050	1.100	1.060	
56	\$131.80	\$140.39	1.000	1.915	3.465	2.639	1.766	1.000	1.915	3.465	2.070	1.100	1.062	
57	\$137.36	\$146.03	1.000	1.928	3.323	2.595	1.744	1.000	1.928	3.323	2.090	1.100	1.064	
58	\$146.81	\$155.79	1.000	1.894	3.191	2.527	1.706	1.000	1.894	3.191	2.110	1.100	1.066	
59	\$156.27	\$165.52	1.000	1.855	3.058	2.463	1.671	1.000	1.855	3.058	2.130	1.100	1.068	
60	\$165.72	\$175.20	1.000	1.819	2.926	2.403	1.638	1.000	1.819	2.926	2.150	1.100	1.070	
61	\$175.18	\$184.86	1.000	1.783	2.793	2.346	1.607	1.000	1.783	2.793	2.170	1.100	1.072	
62	\$184.64	\$194.47	1.000	1.748	2.661	2.293	1.579	1.000	1.748	2.661	2.190	1.100	1.074	
63	\$202.27	\$212.64	1.000	1.710	2.585	2.205	1.526	1.000	1.710	2.585	2.210	1.100	1.076	
64	\$219.90	\$230.76	1.000	1.669	2.509	2.126	1.479	1.000	1.669	2.509	2.230	1.100	1.078	
65	\$237.53	\$248.79	1.000	1.632	2.432	2.054	1.437	1.000	1.632	2.432	2.250	1.100	1.080	
66	\$255.17	\$266.77	1.000	1.634	2.356	1.990	1.418	1.000	1.634	2.356	2.280	1.100	1.082	
67	\$272.79	\$284.67	1.000	1.634	2.280	1.931	1.402	1.000	1.634	2.280	2.310	1.100	1.084	
68	\$309.44	\$322.32	1.000	1.599	2.207	1.852	1.371	1.000	1.599	2.207	2.340	1.100	1.086	
69	\$346.08	\$359.82	1.000	1.565	2.134	1.784	1.347	1.000	1.565	2.134	2.370	1.100	1.088	
70	\$382.71	\$397.18	1.000	1.531	2.060	1.725	1.330	1.000	1.531	2.060	2.400	1.100	1.090	
71	\$419.35	\$434.41	1.000	1.518	1.987	1.674	1.319	1.000	1.518	1.987	2.430	1.100	1.092	
72	\$455.99	\$471.50	1.000	1.504	1.914	1.629	1.313	1.000	1.504	1.914	2.460	1.100	1.094	
73	\$518.02	\$534.67	1.000	1.510	1.882	1.581	1.304	1.000	1.510	1.882	2.490	1.100	1.096	
74	\$580.05	\$597.59	1.000	1.514	1.850	1.542	1.303	1.000	1.514	1.850	2.520	1.100	1.098	
75	\$642.08	\$660.30	1.000	1.520	1.818	1.509	1.307	1.000	1.520	1.818	2.550	1.100	1.100	
76	\$704.10	\$722.76	1.000	1.474	1.786	1.482	1.291	1.000	1.474	1.786	2.580	1.100	1.102	
77	\$766.13	\$785.01	1.000	1.430	1.754	1.458	1.278	1.000	1.430	1.754	2.610	1.100	1.104	
78	\$864.83	\$884.55	1.000	1.430	1.739	1.414	1.247	1.000	1.430	1.739	2.640	1.100	1.106	
79	\$963.54	\$983.73	1.000	1.429	1.724	1.378	1.222	1.000	1.429	1.724	2.670	1.100	1.108	
80	\$1,062.26	\$1,082.56	1.000	1.430	1.710	1.348	1.203	1.000	1.430	1.710	2.700	1.100	1.110	
81	\$1,160.97	\$1,181.03	1.000	1.406	1.695	1.323	1.188	1.000	1.406	1.695	2.730	1.100	1.112	
82	\$1,259.67	\$1,279.14	1.000	1.382	1.680	1.302	1.177	1.000	1.382	1.680	2.760	1.100	1.114	
83	\$1,372.36	\$1,391.07	1.000	1.349	1.642	1.284	1.169	1.000	1.349	1.642	2.790	1.100	1.116	
84	\$1,485.05	\$1,502.61	1.000	1.315	1.603	1.268	1.162	1.000	1.315	1.603	2.820	1.100	1.118	

Multi-Life Discounts		Factor
Employer or Association Iss Age < 65		0.900
Employer or Association Iss Age >= 65		0.900
Home Office and Career Agents Iss Age < 65		0.900
Home Office and Career Agents Iss Age >= 65		0.900
Individual Underwriting Classes		Factor
Ultra Preferred		0.900
Preferred		1.000
Standard		1.250
Joint Policy Factor		Factor
		1.300
Joint Risk Class		Factor
2 Ultra Preferred		0.900
1 Ultra Preferred and 1 Preferred		0.950
1 Ultra Preferred and 1 Standard		1.075
2 Preferred		1.000
1 Preferred and 1 Standard		1.125
2 Standard		1.250
Benefit Type		Factor
Daily Reimbursement		1.000
Home and Community Based Services (HCBS)		1.125
Enhancement Rider		1.370
Indemnity Rider		2.382
Caregiver Indemnity Rider		
Elimination Period		Factor
0 Day		1.300
30 Day		1.200
60 Day		1.100
90 Day		1.000
180 Day		0.900
Benefit Period		Factor
3 Year		0.547
4 Year		N/A
5 Year		N/A
6 Year		0.714
10 Year		N/A
Lifetime		1.066
Payment Mode		Factor
Annual		1.000
Semi-Annual		0.520
Quarterly		0.265
Monthly - Pre-Authorized Check		0.088
Discounted Renewal Premium Factor		Factor
		0.750

*Consistent with 513 Series new business rates prior to any caps. The actual rates implemented will be capped on a serial/basis such that no insured receives more than a 100% increase or a rate decrease.

Massachusetts Mutual Life Insurance Company
1295 State Street, Springfield, MA 01111
200 Series with 2001 Revised Rates
Proposed Premium Rates*

Issue Age	Annual Base Rates			Premium Factors										
	per \$10 of Daily Benefit Amount			Lifetime Pay Inflation Protection			Limited Pay		Limited Pay Inflation Protection			Nonforfeiture		HCBS
	Facility Only	Comprehensive		None	5% Simple	5% Compound	10 Year	20 Year	None	5% Simple	5% Compound	Full	Shortened BP	Prem Wvr
18	\$77.79	\$85.43	1.000	2.056	6.480	3.269	2.070	1.000	2.056	6.480	1.800	1.119	1.030	
19	\$77.79	\$85.43	1.000	2.056	6.446	3.269	2.070	1.000	2.056	6.446	1.800	1.119	1.030	
20	\$77.79	\$85.43	1.000	2.056	6.411	3.269	2.070	1.000	2.056	6.411	1.800	1.118	1.030	
21	\$77.79	\$85.43	1.000	2.056	6.377	3.269	2.070	1.000	2.056	6.377	1.800	1.118	1.030	
22	\$77.79	\$85.43	1.000	2.056	6.343	3.269	2.070	1.000	2.056	6.343	1.800	1.117	1.030	
23	\$77.79	\$85.43	1.000	2.056	6.302	3.269	2.070	1.000	2.056	6.302	1.800	1.116	1.030	
24	\$77.79	\$85.43	1.000	2.056	6.261	3.269	2.070	1.000	2.056	6.261	1.800	1.115	1.030	
25	\$77.79	\$85.43	1.000	2.056	6.220	3.269	2.070	1.000	2.056	6.220	1.800	1.115	1.030	
26	\$77.79	\$85.43	1.000	2.056	6.179	3.269	2.070	1.000	2.056	6.179	1.800	1.114	1.030	
27	\$77.79	\$85.43	1.000	2.056	6.138	3.269	2.070	1.000	2.056	6.138	1.800	1.113	1.030	
28	\$77.79	\$85.43	1.000	2.056	6.101	3.269	2.070	1.000	2.056	6.101	1.800	1.112	1.030	
29	\$77.79	\$85.43	1.000	2.056	6.065	3.269	2.070	1.000	2.056	6.065	1.800	1.112	1.030	
30	\$77.79	\$85.43	1.000	2.056	6.028	3.269	2.070	1.000	2.056	6.028	1.800	1.111	1.030	
31	\$77.79	\$85.43	1.000	2.056	5.992	3.269	2.070	1.000	2.056	5.992	1.800	1.111	1.030	
32	\$77.79	\$85.43	1.000	2.056	5.955	3.269	2.070	1.000	2.056	5.955	1.800	1.110	1.030	
33	\$77.79	\$85.43	1.000	2.056	5.923	3.269	2.070	1.000	2.056	5.923	1.800	1.109	1.030	
34	\$77.79	\$85.43	1.000	2.056	5.890	3.269	2.070	1.000	2.056	5.890	1.800	1.108	1.030	
35	\$77.79	\$85.43	1.000	2.056	5.858	3.269	2.070	1.000	2.056	5.858	1.800	1.107	1.030	
36	\$77.79	\$85.43	1.000	2.056	5.825	3.269	2.070	1.000	2.056	5.825	1.800	1.106	1.030	
37	\$77.79	\$85.43	1.000	2.056	5.793	3.269	2.070	1.000	2.056	5.793	1.800	1.105	1.030	
38	\$79.02	\$86.78	1.000	2.047	5.677	3.269	2.070	1.000	2.047	5.677	1.800	1.104	1.030	
39	\$80.25	\$88.13	1.000	2.038	5.561	3.269	2.070	1.000	2.038	5.561	1.800	1.103	1.030	
40	\$81.47	\$89.47	1.000	2.029	5.445	3.269	2.070	1.000	2.029	5.445	1.800	1.103	1.030	
41	\$82.70	\$90.64	1.000	2.033	5.329	3.269	2.076	1.000	2.033	5.329	1.810	1.102	1.032	
42	\$83.93	\$91.81	1.000	2.036	5.213	3.269	2.082	1.000	2.036	5.213	1.820	1.101	1.034	
43	\$86.00	\$93.89	1.000	2.044	5.106	3.221	2.057	1.000	2.044	5.106	1.830	1.101	1.036	
44	\$88.06	\$95.96	1.000	2.056	4.999	3.173	2.033	1.000	2.056	4.999	1.840	1.101	1.038	
45	\$90.12	\$98.02	1.000	2.066	4.892	3.126	2.009	1.000	2.066	4.892	1.850	1.100	1.040	
46	\$92.18	\$100.07	1.000	2.076	4.785	3.079	1.985	1.000	2.076	4.785	1.870	1.100	1.042	
47	\$94.25	\$102.12	1.000	2.085	4.678	3.033	1.962	1.000	2.085	4.678	1.890	1.100	1.044	
48	\$97.32	\$105.24	1.000	2.069	4.549	2.991	1.941	1.000	2.069	4.549	1.910	1.100	1.046	
49	\$100.39	\$108.35	1.000	2.052	4.419	2.950	1.921	1.000	2.052	4.419	1.930	1.100	1.048	
50	\$103.46	\$111.46	1.000	2.036	4.290	2.909	1.902	1.000	2.036	4.290	1.950	1.100	1.050	
51	\$106.53	\$114.55	1.000	2.049	4.160	2.869	1.882	1.000	2.049	4.160	1.970	1.100	1.052	
52	\$109.60	\$117.62	1.000	2.063	4.031	2.829	1.863	1.000	2.063	4.031	1.990	1.100	1.054	
53	\$115.15	\$123.35	1.000	2.009	3.889	2.779	1.837	1.000	2.009	3.889	2.010	1.100	1.056	
54	\$120.70	\$129.05	1.000	1.954	3.748	2.730	1.812	1.000	1.954	3.748	2.030	1.100	1.058	
55	\$126.25	\$134.73	1.000	1.903	3.606	2.684	1.789	1.000	1.903	3.606	2.050	1.100	1.060	
56	\$131.80	\$140.39	1.000	1.915	3.465	2.639	1.766	1.000	1.915	3.465	2.070	1.100	1.062	
57	\$137.36	\$146.03	1.000	1.928	3.323	2.595	1.744	1.000	1.928	3.323	2.090	1.100	1.064	
58	\$146.81	\$155.79	1.000	1.894	3.191	2.527	1.706	1.000	1.894	3.191	2.110	1.100	1.066	
59	\$156.27	\$165.52	1.000	1.855	3.058	2.463	1.671	1.000	1.855	3.058	2.130	1.100	1.068	
60	\$165.72	\$175.20	1.000	1.819	2.926	2.403	1.638	1.000	1.819	2.926	2.150	1.100	1.070	
61	\$175.18	\$184.86	1.000	1.783	2.793	2.346	1.607	1.000	1.783	2.793	2.170	1.100	1.072	
62	\$184.64	\$194.47	1.000	1.748	2.661	2.293	1.579	1.000	1.748	2.661	2.190	1.100	1.074	
63	\$202.27	\$212.64	1.000	1.710	2.585	2.205	1.526	1.000	1.710	2.585	2.210	1.100	1.076	
64	\$219.90	\$230.76	1.000	1.669	2.509	2.126	1.479	1.000	1.669	2.509	2.230	1.100	1.078	
65	\$237.53	\$248.79	1.000	1.632	2.432	2.054	1.437	1.000	1.632	2.432	2.250	1.100	1.080	
66	\$255.17	\$266.77	1.000	1.634	2.356	1.990	1.418	1.000	1.634	2.356	2.280	1.100	1.082	
67	\$272.79	\$284.67	1.000	1.634	2.280	1.931	1.402	1.000	1.634	2.280	2.310	1.100	1.084	
68	\$309.44	\$322.32	1.000	1.599	2.207	1.852	1.371	1.000	1.599	2.207	2.340	1.100	1.086	
69	\$346.08	\$359.82	1.000	1.565	2.134	1.784	1.347	1.000	1.565	2.134	2.370	1.100	1.088	
70	\$382.71	\$397.18	1.000	1.531	2.060	1.725	1.330	1.000	1.531	2.060	2.400	1.100	1.090	
71	\$419.35	\$434.41	1.000	1.518	1.987	1.674	1.319	1.000	1.518	1.987	2.430	1.100	1.092	
72	\$455.99	\$471.50	1.000	1.504	1.914	1.629	1.313	1.000	1.504	1.914	2.460	1.100	1.094	
73	\$518.02	\$534.67	1.000	1.510	1.882	1.581	1.304	1.000	1.510	1.882	2.490	1.100	1.096	
74	\$580.05	\$597.59	1.000	1.514	1.850	1.542	1.303	1.000	1.514	1.850	2.520	1.100	1.098	
75	\$642.08	\$660.30	1.000	1.520	1.818	1.509	1.307	1.000	1.520	1.818	2.550	1.100	1.100	
76	\$704.10	\$722.76	1.000	1.474	1.786	1.482	1.291	1.000	1.474	1.786	2.580	1.100	1.102	
77	\$766.13	\$785.01	1.000	1.430	1.754	1.458	1.278	1.000	1.430	1.754	2.610	1.100	1.104	
78	\$864.83	\$884.55	1.000	1.430	1.739	1.414	1.247	1.000	1.430	1.739	2.640	1.100	1.106	
79	\$963.54	\$983.73	1.000	1.429	1.724	1.378	1.222	1.000	1.429	1.724	2.670	1.100	1.108	
80	\$1,062.26	\$1,082.56	1.000	1.430	1.710	1.348	1.203	1.000	1.430	1.710	2.700	1.100	1.110	
81	\$1,160.97	\$1,181.03	1.000	1.406	1.695	1.323	1.188	1.000	1.406	1.695	2.730	1.100	1.112	
82	\$1,259.67	\$1,279.14	1.000	1.382	1.680	1.302	1.177	1.000	1.382	1.680	2.760	1.100	1.114	
83	\$1,372.36	\$1,391.07	1.000	1.349	1.642	1.284	1.169	1.000	1.349	1.642	2.790	1.100	1.116	
84	\$1,485.05	\$1,502.61	1.000	1.315	1.603	1.268	1.162	1.000	1.315	1.603	2.820	1.100	1.118	

Multi-Life Discounts		Factor
Employer or Association Iss Age < 65		0.900
Employer or Association Iss Age >= 65		0.900
Home Office and Career Agents Iss Age < 65		0.900
Home Office and Career Agents Iss Age >= 65		0.900
Individual Underwriting Classes		Factor
Ultra Preferred		0.900
Preferred		1.000
Standard		1.250
Joint Policy Factor		Factor
		1.300
Joint Risk Class		Factor
2 Ultra Preferred		0.900
1 Ultra Preferred and 1 Preferred		0.950
1 Ultra Preferred and 1 Standard		1.075
2 Preferred		1.000
1 Preferred and 1 Standard		1.125
2 Standard		1.250
Benefit Type		Factor
Daily Reimbursement		1.000
Home and Community Based Services (HCBS)		1.125
Enhancement Rider		1.370
Indemnity Rider		2.382
Caregiver Indemnity Rider		
Elimination Period		Factor
0 Day		1.300
30 Day		1.200
60 Day		1.100
90 Day		1.000
180 Day		0.900
Benefit Period		Factor
3 Year		0.547
4 Year		N/A
5 Year		N/A
6 Year		0.714
10 Year		N/A
Lifetime		1.066
Payment Mode		Factor
Annual		1.000
Semi-Annual		0.520
Quarterly		0.265
Monthly - Pre-Authorized Check		0.088
Discounted Renewal Premium Factor		Factor
		0.750

*Consistent with 513 Series new business rates prior to any caps. The actual rates implemented will be capped on a serial/basis such that no insured receives more than a 100% increase or a rate decrease.

Massachusetts Mutual Life Insurance Company
1295 State Street, Springfield, MA 01111
400 Series
Proposed Premium Rates*

Issue Age	Annual Base Rates**		Premium Factors										Paid-Up Survivor	
	per \$10 of Daily Benefit Amount		Lifetime Pay Inflation Protection			Limited Pay		Limited Pay Inflation Protection			Nonforfeiture			HCBS Prem Wvvr
	Facility Only	Comprehensive	None	5% Simple	5% Compound	10 Year	20 Year	None	5% Simple	5% Compound	Full	Shortened BP		
18	\$82.45	\$90.56	1.000	2.056	6.480	3.269	2.070	1.000	2.056	6.480	1.800	1.119	1.030	1.065
19	\$82.45	\$90.56	1.000	2.056	6.446	3.269	2.070	1.000	2.056	6.446	1.800	1.119	1.030	1.065
20	\$82.45	\$90.56	1.000	2.056	6.411	3.269	2.070	1.000	2.056	6.411	1.800	1.118	1.030	1.065
21	\$82.45	\$90.56	1.000	2.056	6.377	3.269	2.070	1.000	2.056	6.377	1.800	1.118	1.030	1.065
22	\$82.45	\$90.56	1.000	2.056	6.343	3.269	2.070	1.000	2.056	6.343	1.800	1.117	1.030	1.065
23	\$82.45	\$90.56	1.000	2.056	6.302	3.269	2.070	1.000	2.056	6.302	1.800	1.116	1.030	1.065
24	\$82.45	\$90.56	1.000	2.056	6.261	3.269	2.070	1.000	2.056	6.261	1.800	1.115	1.030	1.065
25	\$82.45	\$90.56	1.000	2.056	6.220	3.269	2.070	1.000	2.056	6.220	1.800	1.115	1.030	1.065
26	\$82.45	\$90.56	1.000	2.056	6.179	3.269	2.070	1.000	2.056	6.179	1.800	1.114	1.030	1.065
27	\$82.45	\$90.56	1.000	2.056	6.138	3.269	2.070	1.000	2.056	6.138	1.800	1.113	1.030	1.065
28	\$82.45	\$90.56	1.000	2.056	6.101	3.269	2.070	1.000	2.056	6.101	1.800	1.112	1.030	1.065
29	\$82.45	\$90.56	1.000	2.056	6.065	3.269	2.070	1.000	2.056	6.065	1.800	1.112	1.030	1.065
30	\$82.45	\$90.56	1.000	2.056	6.028	3.269	2.070	1.000	2.056	6.028	1.800	1.111	1.030	1.065
31	\$82.45	\$90.56	1.000	2.056	5.992	3.269	2.070	1.000	2.056	5.992	1.800	1.111	1.030	1.065
32	\$82.45	\$90.56	1.000	2.056	5.955	3.269	2.070	1.000	2.056	5.955	1.800	1.110	1.030	1.065
33	\$82.45	\$90.56	1.000	2.056	5.923	3.269	2.070	1.000	2.056	5.923	1.800	1.109	1.030	1.065
34	\$82.45	\$90.56	1.000	2.056	5.890	3.269	2.070	1.000	2.056	5.890	1.800	1.108	1.030	1.065
35	\$82.45	\$90.56	1.000	2.056	5.858	3.269	2.070	1.000	2.056	5.858	1.800	1.107	1.030	1.065
36	\$82.45	\$90.56	1.000	2.056	5.825	3.269	2.070	1.000	2.056	5.825	1.800	1.106	1.030	1.065
37	\$82.45	\$90.56	1.000	2.056	5.793	3.269	2.070	1.000	2.056	5.793	1.800	1.105	1.030	1.065
38	\$83.76	\$91.99	1.000	2.047	5.677	3.269	2.070	1.000	2.047	5.677	1.800	1.104	1.030	1.066
39	\$85.06	\$93.42	1.000	2.038	5.561	3.269	2.070	1.000	2.038	5.561	1.800	1.103	1.030	1.067
40	\$86.35	\$94.84	1.000	2.029	5.445	3.269	2.070	1.000	2.029	5.445	1.800	1.103	1.030	1.068
41	\$87.66	\$96.08	1.000	2.033	5.329	3.269	2.076	1.000	2.033	5.329	1.810	1.102	1.032	1.069
42	\$88.96	\$97.32	1.000	2.036	5.213	3.269	2.082	1.000	2.036	5.213	1.820	1.101	1.034	1.070
43	\$91.16	\$99.53	1.000	2.044	5.106	3.221	2.057	1.000	2.044	5.106	1.830	1.101	1.036	1.072
44	\$93.34	\$101.72	1.000	2.056	4.999	3.173	2.033	1.000	2.056	4.999	1.840	1.101	1.038	1.074
45	\$95.52	\$103.91	1.000	2.066	4.892	3.126	2.009	1.000	2.066	4.892	1.850	1.100	1.040	1.076
46	\$97.71	\$106.08	1.000	2.076	4.785	3.079	1.985	1.000	2.076	4.785	1.870	1.100	1.042	1.078
47	\$99.90	\$108.25	1.000	2.085	4.678	3.033	1.962	1.000	2.085	4.678	1.890	1.100	1.044	1.080
48	\$103.15	\$111.56	1.000	2.069	4.549	2.991	1.941	1.000	2.069	4.549	1.910	1.100	1.046	1.084
49	\$106.41	\$114.86	1.000	2.052	4.419	2.950	1.921	1.000	2.052	4.419	1.930	1.100	1.048	1.088
50	\$109.66	\$118.15	1.000	2.036	4.290	2.909	1.902	1.000	2.036	4.290	1.950	1.100	1.050	1.092
51	\$112.92	\$121.42	1.000	2.049	4.160	2.869	1.882	1.000	2.049	4.160	1.970	1.100	1.052	1.096
52	\$116.17	\$124.68	1.000	2.063	4.031	2.829	1.863	1.000	2.063	4.031	1.990	1.100	1.054	1.100
53	\$122.05	\$130.75	1.000	2.009	3.889	2.779	1.837	1.000	2.009	3.889	2.010	1.100	1.056	1.104
54	\$127.94	\$136.79	1.000	1.954	3.748	2.730	1.812	1.000	1.954	3.748	2.030	1.100	1.058	1.108
55	\$133.82	\$142.82	1.000	1.903	3.606	2.684	1.789	1.000	1.903	3.606	2.050	1.100	1.060	1.112
56	\$139.70	\$148.81	1.000	1.915	3.465	2.639	1.766	1.000	1.915	3.465	2.070	1.100	1.062	1.116
57	\$145.60	\$154.79	1.000	1.928	3.323	2.595	1.744	1.000	1.928	3.323	2.090	1.100	1.064	1.120
58	\$155.61	\$165.14	1.000	1.894	3.191	2.527	1.706	1.000	1.894	3.191	2.110	1.100	1.066	1.124
59	\$165.64	\$175.45	1.000	1.855	3.058	2.463	1.671	1.000	1.855	3.058	2.130	1.100	1.068	1.128
60	\$175.66	\$185.71	1.000	1.819	2.926	2.403	1.638	1.000	1.819	2.926	2.150	1.100	1.070	1.132
61	\$185.69	\$195.95	1.000	1.783	2.793	2.346	1.607	1.000	1.783	2.793	2.170	1.100	1.072	1.136
62	\$195.71	\$206.14	1.000	1.748	2.661	2.293	1.579	1.000	1.748	2.661	2.190	1.100	1.074	1.140
63	\$214.40	\$225.40	1.000	1.710	2.585	2.205	1.526	1.000	1.710	2.585	2.210	1.100	1.076	1.142
64	\$233.09	\$244.60	1.000	1.669	2.509	2.126	1.479	1.000	1.669	2.509	2.230	1.100	1.078	1.144
65	\$251.78	\$263.72	1.000	1.632	2.432	2.054	1.437	1.000	1.632	2.432	2.250	1.100	1.080	1.146
66	\$270.48	\$282.78	1.000	1.634	2.356	1.990	1.418	1.000	1.634	2.356	2.280	1.100	1.082	1.148
67	\$289.15	\$301.75	1.000	1.634	2.280	1.931	1.402	1.000	1.634	2.280	2.310	1.100	1.084	1.150
68	\$328.00	\$341.65	1.000	1.599	2.207	1.852	1.371	1.000	1.599	2.207	2.340	1.100	1.086	1.150
69	\$366.84	\$381.41	1.000	1.565	2.134	1.784	1.347	1.000	1.565	2.134	2.370	1.100	1.088	1.150
70	\$405.67	\$421.01	1.000	1.531	2.060	1.725	1.330	1.000	1.531	2.060	2.400	1.100	1.090	1.150
71	\$444.51	\$460.47	1.000	1.518	1.987	1.674	1.319	1.000	1.518	1.987	2.430	1.100	1.092	1.150
72	\$483.34	\$499.79	1.000	1.504	1.914	1.629	1.313	1.000	1.504	1.914	2.460	1.100	1.094	1.150
73	\$549.10	\$566.75	1.000	1.510	1.882	1.581	1.304	1.000	1.510	1.882	2.490	1.100	1.096	1.150
74	\$614.85	\$633.45	1.000	1.514	1.850	1.542	1.303	1.000	1.514	1.850	2.520	1.100	1.098	1.150
75	\$680.60	\$699.91	1.000	1.520	1.818	1.509	1.307	1.000	1.520	1.818	2.550	1.100	1.100	1.150
76	\$746.34	\$766.13	1.000	1.474	1.786	1.482	1.291	1.000	1.474	1.786	2.580	1.100	1.102	1.150
77	\$812.09	\$832.11	1.000	1.430	1.754	1.458	1.278	1.000	1.430	1.754	2.610	1.100	1.104	1.150
78	\$916.71	\$937.63	1.000	1.430	1.739	1.414	1.247	1.000	1.430	1.739	2.640	1.100	1.106	1.150
79	\$1,021.35	\$1,042.76	1.000	1.429	1.724	1.378	1.222	1.000	1.429	1.724	2.670	1.100	1.108	1.150
80	\$1,125.99	\$1,147.52	1.000	1.430	1.710	1.348	1.203	1.000	1.430	1.710	2.700	1.100	1.110	1.150
81	\$1,230.62	\$1,251.89	1.000	1.406	1.695	1.323	1.188	1.000	1.406	1.695	2.730	1.100	1.112	1.150
82	\$1,335.25	\$1,355.89	1.000	1.382	1.680	1.302	1.177	1.000	1.382	1.680	2.760	1.100	1.114	1.150
83	\$1,454.70	\$1,474.53	1.000	1.349	1.642	1.284	1.169	1.000	1.349	1.642	2.790	1.100	1.116	1.150
84	\$1,574.15	\$1,592.76	1.000	1.315	1.603	1.268	1.162	1.000	1.315	1.603	2.820	1.100	1.118	1.150

Discounts		Factor
Multi-Life		0.900

Individual Underwriting Classes		Factor
Ultra Preferred		0.900
Preferred		1.000
Standard		1.250

Joint Policy Factor	1.300
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Joint Risk Class		Factor
2 Ultra Preferred		0.900
1 Ultra Preferred and 1 Preferred		0.950
1 Ultra Preferred and 1 Standard		1.075
2 Preferred		1.000
1 Preferred and 1 Standard		1.125
2 Standard		1.250

Benefit Type		Factor
Daily Reimbursement		1.000
Monthly Home and Community Based Services (HCBS) Rider		1.045
Indemnity Rider		1.370

Elimination Period		Factor**	Elimination Period Rider	
			Enhanced EP	HCBS First Day Coverage
0 Day		1.318	N/A	1.000
30 Day		1.166	N/A	1.038
60 Day		1.084	N/A	1.062
90 Day		1.000	N/A	1.094
180 Day		0.913	N/A	1.162

Benefit Period		Premium Factor	Rider	
			Restoration of Benefits	Limited Family Care Giver
3 Year		0.547	1.040	1.200
4 Year		0.613	1.040	1.150
5 Year		0.673	1.040	1.120
6 Year		0.714	1.040	1.100
10 Year		0.913	1.040	1.100
Lifetime		1.066	N/A	1.100

Payment Mode		Factor
Annual		1.000
Semi-Annual		0.520
Quarterly		0.265
Monthly - Pre-Authorized Check		0.088

Discounted Renewal Premium Factor	0.750
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* Consistent with 513 Series new business rates prior to any caps. The actual rates implemented will be capped on a serialim basis such that no insured

Massachusetts Mutual Life Insurance Company
1295 State Street, Springfield, MA 01111
500 Series
Proposed Premium Rates*

Issue Age	Annual Base Rates			Premium Factors																
	per \$10 of Daily Facility Only	Benefit Amount Comprehensive		Inflation Protection				10 Year Paid Up				Paid Up at 65				Nonforfeiture Shortened BP	Return of Premium Less Claims	Full	Cov Part Prem Waiv	Paid-Up Survivor
				None	5% Simple	3% Compound	5% Compound	None	5% Simple	3% Compound	5% Compound	None	5% Simple	3% Compound	5% Compound					
18	\$77.79	\$88.00	1.000	2.056	2.361	6.480	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.119	1.250	1.470	1.010	1.065	
19	\$77.79	\$88.00	1.000	2.056	2.361	6.446	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.119	1.250	1.470	1.010	1.065	
20	\$77.79	\$88.00	1.000	2.056	2.361	6.411	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.118	1.250	1.470	1.010	1.065	
21	\$77.79	\$88.00	1.000	2.056	2.361	6.377	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.118	1.250	1.470	1.010	1.065	
22	\$77.79	\$88.00	1.000	2.056	2.361	6.343	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.117	1.250	1.470	1.010	1.065	
23	\$77.79	\$88.00	1.000	2.056	2.361	6.308	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.116	1.250	1.470	1.010	1.065	
24	\$77.79	\$88.00	1.000	2.056	2.361	6.261	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.115	1.250	1.470	1.010	1.065	
25	\$77.79	\$88.00	1.000	2.056	2.361	6.220	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.115	1.250	1.470	1.010	1.065	
26	\$77.79	\$88.00	1.000	2.056	2.361	6.179	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.114	1.250	1.470	1.010	1.065	
27	\$77.79	\$88.00	1.000	2.056	2.361	6.138	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.113	1.250	1.470	1.010	1.065	
28	\$77.79	\$88.00	1.000	2.056	2.361	6.101	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.112	1.250	1.470	1.010	1.065	
29	\$77.79	\$88.00	1.000	2.056	2.361	6.065	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.112	1.250	1.470	1.010	1.065	
30	\$77.79	\$88.00	1.000	2.056	2.361	6.028	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.111	1.250	1.470	1.010	1.065	
31	\$77.79	\$88.00	1.000	2.056	2.361	5.992	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.111	1.250	1.470	1.010	1.065	
32	\$77.79	\$88.00	1.000	2.056	2.361	5.955	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.110	1.250	1.470	1.010	1.065	
33	\$77.79	\$88.00	1.000	2.056	2.361	5.923	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.109	1.250	1.470	1.010	1.065	
34	\$77.79	\$88.00	1.000	2.056	2.361	5.890	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.108	1.250	1.470	1.010	1.065	
35	\$77.79	\$88.00	1.000	2.056	2.361	5.858	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.107	1.250	1.470	1.010	1.065	
36	\$77.79	\$88.00	1.000	2.056	2.361	5.825	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.106	1.250	1.470	1.010	1.065	
37	\$77.79	\$88.00	1.000	2.056	2.361	5.793	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.105	1.250	1.470	1.010	1.065	
38	\$79.02	\$89.39	1.000	2.047	2.351	5.777	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.104	1.250	1.470	1.010	1.066	
39	\$80.25	\$90.78	1.000	2.038	2.341	5.561	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.103	1.250	1.470	1.010	1.067	
44	\$81.47	\$92.16	1.000	2.029	2.330	5.445	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.103	1.250	1.470	1.010	1.068	
41	\$82.70	\$93.55	1.000	2.033	2.320	5.329	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.102	1.240	1.490	1.010	1.069	
42	\$83.93	\$94.94	1.000	2.036	2.310	5.213	3.269	3.269	3.269	3.269	1.811	1.811	1.811	1.811	1.101	1.255	1.510	1.010	1.070	
43	\$86.00	\$97.28	1.000	2.044	2.299	5.106	3.221	3.221	3.221	3.221	1.856	1.856	1.856	1.856	1.101	1.272	1.543	1.010	1.072	
44	\$88.06	\$99.61	1.000	2.056	2.288	4.999	3.173	3.173	3.173	3.173	1.901	1.901	1.901	1.901	1.101	1.289	1.576	1.010	1.074	
45	\$90.12	\$101.95	1.000	2.066	2.277	4.892	3.126	3.126	3.126	3.126	1.946	1.946	1.946	1.946	1.100	1.306	1.609	1.010	1.076	
46	\$92.18	\$104.28	1.000	2.076	2.266	4.785	3.079	3.079	3.079	3.079	1.990	1.990	1.990	1.990	1.100	1.323	1.642	1.010	1.078	
47	\$94.25	\$106.62	1.000	2.085	2.255	4.678	3.033	3.033	3.033	3.033	2.033	2.033	2.033	2.033	1.100	1.340	1.675	1.010	1.080	
48	\$97.32	\$110.09	1.000	2.069	2.229	4.549	2.991	2.991	2.991	2.991	2.115	2.115	2.115	2.115	1.100	1.360	1.729	1.010	1.084	
49	\$100.39	\$113.56	1.000	2.052	2.202	4.419	2.950	2.950	2.950	2.950	2.196	2.196	2.196	2.196	1.100	1.380	1.783	1.010	1.088	
50	\$103.46	\$117.04	1.000	2.036	2.176	4.290	2.909	2.909	2.909	2.909	2.277	2.277	2.277	2.277	1.100	1.400	1.837	1.010	1.092	
51	\$106.53	\$120.51	1.000	2.049	2.149	4.160	2.869	2.869	2.869	2.869	2.356	2.356	2.356	2.356	1.100	1.420	1.891	1.010	1.096	
52	\$109.60	\$123.98	1.000	2.063	2.123	4.031	2.829	2.829	2.829	2.829	2.435	2.435	2.435	2.435	1.100	1.440	1.945	1.010	1.100	
53	\$115.15	\$130.26	1.000	2.009	2.079	3.889	2.779	2.779	2.779	2.779	2.521	2.521	2.521	2.521	1.100	1.468	2.034	1.010	1.104	
54	\$120.70	\$136.54	1.000	1.954	2.036	3.748	2.730	2.730	2.730	2.730	2.604	2.604	2.604	2.604	1.100	1.496	2.123	1.010	1.108	
55	\$126.25	\$142.82	1.000	1.903	1.992	3.606	2.684	2.684	2.684	2.684	2.684	2.684	2.684	2.684	1.100	1.524	2.212	1.010	1.112	
56	\$131.80	\$149.10	1.000	1.915	1.949	3.465	2.639	2.639	2.639	2.639	N/A	N/A	N/A	N/A	1.100	1.552	2.301	1.010	1.116	
57	\$137.36	\$155.38	1.000	1.928	1.905	3.323	2.595	2.595	2.595	2.595	N/A	N/A	N/A	N/A	1.100	1.580	2.390	1.010	1.120	
58	\$146.81	\$166.08	1.000	1.894	1.858	3.191	2.527	2.527	2.527	2.527	N/A	N/A	N/A	N/A	1.100	1.617	2.551	1.010	1.124	
59	\$156.27	\$176.78	1.000	1.855	1.810	3.058	2.463	2.463	2.463	2.463	N/A	N/A	N/A	N/A	1.100	1.654	2.712	1.010	1.128	
60	\$165.72	\$187.47	1.000	1.819	1.763	2.926	2.403	2.403	2.403	2.403	N/A	N/A	N/A	N/A	1.100	1.691	2.873	1.010	1.132	
61	\$175.18	\$198.17	1.000	1.783	1.715	2.793	2.346	2.346	2.346	2.346	N/A	N/A	N/A	N/A	1.100	1.728	3.034	1.010	1.136	
62	\$184.64	\$208.87	1.000	1.748	1.668	2.661	2.293	2.293	2.293	2.293	N/A	N/A	N/A	N/A	1.100	1.765	3.195	1.010	1.140	
63	\$202.27	\$228.81	1.000	1.710	1.639	2.585	2.205	2.205	2.205	2.205	N/A	N/A	N/A	N/A	1.100	1.817	3.569	1.012	1.142	
64	\$219.90	\$248.76	1.000	1.669	1.609	2.509	2.126	2.126	2.126	2.126	N/A	N/A	N/A	N/A	1.100	1.869	3.943	1.014	1.144	
65	\$237.53	\$268.70	1.000	1.632	1.580	2.432	2.054	2.054	2.054	2.054	N/A	N/A	N/A	N/A	1.100	1.921	4.317	1.016	1.146	
66	\$255.17	\$288.65	1.000	1.634	1.550	2.356	1.990	1.990	1.990	1.990	N/A	N/A	N/A	N/A	1.100	1.973	N/A	1.018	1.148	
67	\$272.79	\$308.59	1.000	1.634	1.521	2.280	1.931	1.931	1.931	1.931	N/A	N/A	N/A	N/A	1.100	2.025	N/A	1.020	1.150	
68	\$309.44	\$350.04	1.000	1.599	1.493	2.207	1.852	1.852	1.852	1.852	N/A	N/A	N/A	N/A	1.100	2.101	N/A	1.022	1.150	
69	\$346.08	\$391.49	1.000	1.565	1.465	2.134	1.784	1.784	1.784	1.784	N/A	N/A	N/A	N/A	1.100	2.177	N/A	1.024	1.150	
70	\$382.71	\$432.93	1.000	1.531	1.437	2.060	1.725	1.725	1.725	1.725	N/A	N/A	N/A	N/A	1.100	2.253	N/A	1.026	1.150	
71	\$419.35	\$474.38	1.000	1.518	1.409	1.987	1.674	1.674	1.674	1.674	N/A	N/A	N/A	N/A	1.100	2.329	N/A	1.028	1.150	
72	\$455.99	\$515.83	1.000	1.504	1.381	1.914	1.629	1.629	1.629	1.629	N/A	N/A	N/A	N/A	1.100	2.405	N/A	1.030	1.150	
73	\$518.02	\$586.00	1.000	1.510	1.367	1.882	1.581	1.581	1.581	1.581	N/A	N/A	N/A	N/A	1.100	2.521	N/A	1.036	1.150	
74	\$580.05	\$656.16	1.000	1.514	1.352	1.850	1.542	1.542	1.542	1.542	N/A	N/A	N/A	N/A	1.100	2.637	N/A	1.042	1.150	
75	\$642.08	\$726.33	1.000	1.520	1.338	1.818	1.509	1.509	1.509	1.509	N/A	N/A	N/A	N/A	1.100	2.753	N/A	1.048	1.150	
76	\$704.10	\$796.49	1.000	1.474	1.323	1.786	1.482	1.482	1.482	1.482	N/A	N/A	N/A	N/A	1.100	2.869	N/A	1.054	1.150	
77	\$766.13	\$866.66	1.000	1.430	1.309	1.754	1.458	1.458	1.458	1.458	N/A	N/A	N/A	N/A	1.100	2.985	N/A	1.060	1.150	
78	\$864.83	\$978.32	1.000	1.430	1.301	1.739	1.414	1.414	1.414	1.414	N/A	N/A	N/A	N/A	1.100	3.170				

Massachusetts Mutual Life Insurance Company
1295 State Street, Springfield, MA 01111
511 Series
Proposed Premium Rates*

Issue Age	Annual Base Rates		Premium Factors										
	per \$10 of Daily Benefit Amount		Inflation Protection			Limited Pay		Nonforfeiture		Return of Premium		Cov Part Prem Waiv	Paid-Up Survivor
	Facility Only	Comprehensive	None	3% Compound	5% Compound	10 Yr	To 65	Shortened BP	Less Claims	Full			
18	\$77.79	\$88.00	1.000	2.361	6.480	3.269	1.811	1.119	1.250	1.470	1.010	1.065	
19	\$77.79	\$88.00	1.000	2.361	6.446	3.269	1.811	1.119	1.250	1.470	1.010	1.065	
20	\$77.79	\$88.00	1.000	2.361	6.411	3.269	1.811	1.118	1.250	1.470	1.010	1.065	
21	\$77.79	\$88.00	1.000	2.361	6.377	3.269	1.811	1.118	1.250	1.470	1.010	1.065	
22	\$77.79	\$88.00	1.000	2.361	6.343	3.269	1.811	1.117	1.250	1.470	1.010	1.065	
23	\$77.79	\$88.00	1.000	2.361	6.302	3.269	1.811	1.116	1.250	1.470	1.010	1.065	
24	\$77.79	\$88.00	1.000	2.361	6.261	3.269	1.811	1.115	1.250	1.470	1.010	1.065	
25	\$77.79	\$88.00	1.000	2.361	6.220	3.269	1.811	1.115	1.250	1.470	1.010	1.065	
26	\$77.79	\$88.00	1.000	2.361	6.179	3.269	1.811	1.114	1.250	1.470	1.010	1.065	
27	\$77.79	\$88.00	1.000	2.361	6.138	3.269	1.811	1.113	1.250	1.470	1.010	1.065	
28	\$77.79	\$88.00	1.000	2.361	6.101	3.269	1.811	1.112	1.250	1.470	1.010	1.065	
29	\$77.79	\$88.00	1.000	2.361	6.065	3.269	1.811	1.112	1.250	1.470	1.010	1.065	
30	\$77.79	\$88.00	1.000	2.361	6.028	3.269	1.811	1.111	1.250	1.470	1.010	1.065	
31	\$77.79	\$88.00	1.000	2.361	5.992	3.269	1.811	1.111	1.250	1.470	1.010	1.065	
32	\$77.79	\$88.00	1.000	2.361	5.955	3.269	1.811	1.110	1.250	1.470	1.010	1.065	
33	\$77.79	\$88.00	1.000	2.361	5.923	3.269	1.811	1.109	1.250	1.470	1.010	1.065	
34	\$77.79	\$88.00	1.000	2.361	5.890	3.269	1.811	1.108	1.250	1.470	1.010	1.065	
35	\$77.79	\$88.00	1.000	2.361	5.858	3.269	1.811	1.107	1.250	1.470	1.010	1.065	
36	\$77.79	\$88.00	1.000	2.361	5.825	3.269	1.811	1.106	1.250	1.470	1.010	1.065	
37	\$77.79	\$88.00	1.000	2.361	5.793	3.269	1.811	1.105	1.250	1.470	1.010	1.065	
38	\$79.02	\$89.39	1.000	2.351	5.677	3.269	1.811	1.104	1.250	1.470	1.010	1.066	
39	\$80.25	\$90.78	1.000	2.341	5.561	3.269	1.811	1.103	1.250	1.470	1.010	1.067	
40	\$81.47	\$92.16	1.000	2.330	5.445	3.269	1.811	1.103	1.250	1.470	1.010	1.068	
41	\$82.70	\$93.55	1.000	2.320	5.329	3.269	1.811	1.102	1.240	1.490	1.010	1.069	
42	\$83.93	\$94.94	1.000	2.310	5.213	3.269	1.811	1.101	1.255	1.510	1.010	1.070	
43	\$86.00	\$97.28	1.000	2.299	5.106	3.221	1.856	1.101	1.272	1.543	1.010	1.072	
44	\$88.06	\$99.61	1.000	2.288	4.999	3.173	1.901	1.101	1.289	1.576	1.010	1.074	
45	\$90.12	\$101.95	1.000	2.277	4.892	3.126	1.946	1.100	1.306	1.609	1.010	1.076	
46	\$92.18	\$104.28	1.000	2.266	4.785	3.079	1.990	1.100	1.323	1.642	1.010	1.078	
47	\$94.25	\$106.62	1.000	2.255	4.678	3.033	2.033	1.100	1.340	1.675	1.010	1.080	
48	\$97.32	\$110.09	1.000	2.229	4.549	2.991	2.115	1.100	1.360	1.729	1.010	1.084	
49	\$100.39	\$113.56	1.000	2.202	4.419	2.950	2.196	1.100	1.380	1.783	1.010	1.088	
50	\$103.46	\$117.04	1.000	2.176	4.290	2.909	2.277	1.100	1.400	1.837	1.010	1.092	
51	\$106.53	\$120.51	1.000	2.149	4.160	2.869	2.356	1.100	1.420	1.891	1.010	1.096	
52	\$109.60	\$123.98	1.000	2.123	4.031	2.829	2.435	1.100	1.440	1.945	1.010	1.100	
53	\$115.15	\$130.26	1.000	2.079	3.889	2.779	2.521	1.100	1.468	2.034	1.010	1.104	
54	\$120.70	\$136.54	1.000	2.036	3.748	2.730	2.604	1.100	1.496	2.123	1.010	1.108	
55	\$126.25	\$142.82	1.000	1.992	3.606	2.684	2.684	1.100	1.524	2.212	1.010	1.112	
56	\$131.80	\$149.10	1.000	1.949	3.465	2.639	N/A	1.100	1.552	2.301	1.010	1.116	
57	\$137.36	\$155.38	1.000	1.905	3.323	2.595	N/A	1.100	1.580	2.390	1.010	1.120	
58	\$146.81	\$166.08	1.000	1.858	3.191	2.527	N/A	1.100	1.617	2.551	1.010	1.124	
59	\$156.27	\$176.78	1.000	1.810	3.058	2.463	N/A	1.100	1.654	2.712	1.010	1.128	
60	\$165.72	\$187.47	1.000	1.763	2.926	2.403	N/A	1.100	1.691	2.873	1.010	1.132	
61	\$175.18	\$198.17	1.000	1.715	2.793	2.346	N/A	1.100	1.728	3.034	1.010	1.136	
62	\$184.64	\$208.87	1.000	1.668	2.661	2.293	N/A	1.100	1.765	3.195	1.010	1.140	
63	\$202.27	\$228.81	1.000	1.639	2.585	2.205	N/A	1.100	1.817	3.569	1.012	1.142	
64	\$219.90	\$248.76	1.000	1.609	2.509	2.126	N/A	1.100	1.869	3.943	1.014	1.144	
65	\$237.53	\$268.70	1.000	1.580	2.432	2.054	N/A	1.100	1.921	4.317	1.016	1.146	
66	\$255.17	\$288.65	1.000	1.550	2.356	1.990	N/A	1.100	1.973	N/A	1.018	1.148	
67	\$272.79	\$308.59	1.000	1.521	2.280	1.931	N/A	1.100	2.025	N/A	1.020	1.150	
68	\$309.44	\$350.04	1.000	1.493	2.207	1.852	N/A	1.100	2.101	N/A	1.022	1.150	
69	\$346.08	\$391.49	1.000	1.465	2.134	1.784	N/A	1.100	2.177	N/A	1.024	1.150	
70	\$382.71	\$432.93	1.000	1.437	2.060	1.725	N/A	1.100	2.253	N/A	1.026	1.150	
71	\$419.35	\$474.38	1.000	1.409	1.987	1.674	N/A	1.100	2.329	N/A	1.028	1.150	
72	\$455.99	\$515.83	1.000	1.381	1.914	1.629	N/A	1.100	2.405	N/A	1.030	1.150	
73	\$518.02	\$586.00	1.000	1.367	1.882	1.581	N/A	1.100	2.521	N/A	1.036	1.150	
74	\$580.05	\$656.16	1.000	1.352	1.850	1.542	N/A	1.100	2.637	N/A	1.042	1.150	
75	\$642.08	\$726.33	1.000	1.338	1.818	1.509	N/A	1.100	2.753	N/A	1.048	1.150	
76	\$704.10	\$796.49	1.000	1.323	1.786	1.482	N/A	1.100	2.869	N/A	1.054	1.150	
77	\$766.13	\$866.66	1.000	1.309	1.754	1.458	N/A	1.100	2.985	N/A	1.060	1.150	
78	\$864.83	\$978.32	1.000	1.301	1.739	1.414	N/A	1.100	3.170	N/A	1.066	1.150	
79	\$963.54	\$1,089.98	1.000	1.293	1.724	1.378	N/A	1.100	3.355	N/A	1.072	1.150	
80	\$1,062.26	\$1,201.65	1.000	1.286	1.710	1.348	N/A	1.100	3.541	N/A	1.078	1.150	
81	\$1,160.97	\$1,313.31	1.000	1.278	1.695	1.323	N/A	1.100	3.726	N/A	1.084	1.150	
82	\$1,259.67	\$1,424.97	1.000	1.270	1.680	1.302	N/A	1.100	3.911	N/A	1.090	1.150	
83	\$1,372.36	\$1,552.44	1.000	1.252	1.642	1.284	N/A	1.100	4.361	N/A	1.092	1.150	
84	\$1,485.05	\$1,679.92	1.000	1.234	1.603	1.268	N/A	1.100	4.811	N/A	1.095	1.150	

Discounts	Factor
Single Partner	1.000
Partner	0.850
Covered Partner	0.700
Multi-Product	0.950
Multi-Life	0.900

Individual Underwriting Classes	Factor
Ultra Preferred	0.900
Select Preferred	1.000
Preferred	1.250
Standard Plus	2.500
Standard	5.000

Benefit Type	Factor
Daily Reimbursement	1.000
Monthly Home and Community Based Services (HCBS) Rider	1.045

Elimination Period	Factor	Elimination Period Riders	
		Enhanced EP	HCBS EP Waiver
0 Day	N/A	N/A	N/A
30 Day	1.200	1.030	1.070
60 Day	1.100	1.045	1.110
90 Day	1.000	1.060	1.160
180 Day	0.900	1.075	1.250

Benefit Period	Premium Factor	Rider	
		Restoration of Benefits	Shared Care
1 Year	N/A	N/A	N/A
1.5 Year	N/A	N/A	N/A
2 Year	0.447	1.040	1.353
3 Year	0.547	1.040	1.290
4 Year	0.613	1.040	1.290
5 Year	0.673	1.040	1.290
6 Year	0.714	1.040	1.290
10 Year	0.913	1.040	1.167
Lifetime	1.066	N/A	N/A

Payment Mode	Factor
Annual	1.000
Semi-Annual	0.520
Quarterly	0.265
Monthly - Pre-Authorized Check	0.088

* Consistent with 513 Series new business rates prior to any caps. The actual rates implemented will be capped on a serialim basis such that no insured receives more than a 100% increase or a rate decrease.

SERFF Tracking #:

MILL-131506880

State Tracking #:

MILL-131506880

Company Tracking #:

MASSMUTUAL

State:

Pennsylvania

Filing Company:

Massachusetts Mutual Life Insurance Company

TOI/Sub-TOI:

LTC03I Individual Long Term Care/LTC03I.001 Qualified

Product Name:

Long-Term Care

Project Name/Number:

MassMutual LTC Rate Increase Filing/145MML01-10.02

Supporting Document Schedules

Satisfied - Item:	Transmittal Letter (A&H)
Comments:	
Attachment(s):	PA_Cover Letter_MML_LRRS_20180730.pdf
Item Status:	
Status Date:	

Bypassed - Item:	Actuarial Certification (A&H)
Bypass Reason:	Not applicable as this is not a form filing.
Attachment(s):	
Item Status:	
Status Date:	

Satisfied - Item:	Actuarial Memorandum and Explanatory Information (A&H)
Comments:	
Attachment(s):	PA_ActMemo_MML_LRRS_20180730.pdf PA_Supplement_MML_LRRS_20180730.pdf
Item Status:	
Status Date:	

Bypassed - Item:	Advertisements (A&H)
Bypass Reason:	Not applicable as this is not a form filing.
Attachment(s):	
Item Status:	
Status Date:	

Satisfied - Item:	Authorization to File (A&H)
Comments:	
Attachment(s):	Authorization to File 20180327.pdf
Item Status:	
Status Date:	

Bypassed - Item:	Insert Page Explanation (A&H)
Bypass Reason:	Not applicable as this is not a form filing.
Attachment(s):	
Item Status:	

State: Pennsylvania Filing Company: Massachusetts Mutual Life Insurance Company
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified
 Product Name: Long-Term Care
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Status Date:	
Bypassed - Item:	Rate Table (A&H)
Bypass Reason:	Rate tables are attached on the Rate/Rule Schedule Tab.
Attachment(s):	
Item Status:	
Status Date:	
Bypassed - Item:	Replacement Form with Highlighted Changes (A&H)
Bypass Reason:	Not applicable as this is not a form filing.
Attachment(s):	
Item Status:	
Status Date:	
Bypassed - Item:	Reserve Calculation (A&H)
Bypass Reason:	Not applicable as this is not a form filing.
Attachment(s):	
Item Status:	
Status Date:	
Bypassed - Item:	Variability Explanation (A&H)
Bypass Reason:	Not applicable as this is not a form filing.
Attachment(s):	
Item Status:	
Status Date:	
Satisfied - Item:	Numerical Data in Excel
Comments:	
Attachment(s):	PA_Supplement Attachments_20180730.xlsx
Item Status:	
Status Date:	
Satisfied - Item:	Sample Policyowner Notification Letter
Comments:	Please note that in the future slight variations in language may occur that do not materially change the information being provided to the policyowner. It is our understanding that such variations do not need to be filed with the Department.
Attachment(s):	Notification Letter 20180501 generic.pdf
Item Status:	
Status Date:	

SERFF Tracking #:

MILL-131506880

State Tracking #:

MILL-131506880

Company Tracking #:

MASSMUTUAL

State:

Pennsylvania

Filing Company:

Massachusetts Mutual Life Insurance Company

TOI/Sub-TOI:

LTC03I Individual Long Term Care/LTC03I.001 Qualified

Product Name:

Long-Term Care

Project Name/Number:

MassMutual LTC Rate Increase Filing/145MML01-10.02

SERFF Tracking #:	MILL-131506880	State Tracking #:	MILL-131506880	Company Tracking #:	MASSMUTUAL
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State:	Pennsylvania	Filing Company:	Massachusetts Mutual Life Insurance Company
TOI/Sub-TOI:	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
Product Name:	Long-Term Care		
Project Name/Number:	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Attachment PA_Supplement Attachments_20180730.xlsx is not a PDF document and cannot be reproduced here.



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July 30, 2018

Honorable Jessica Altman
Insurance Commissioner
Pennsylvania Insurance Department (Department)

Via *SERFF*

**Re: Massachusetts Mutual Life Insurance Company (MassMutual)
Company NAIC # 65935
SERFF Tracking # MILL-131506880**

200 Series

Tax-Qualified Comprehensive Long-Term Care Policy Form	MM-200-P-PA et al.
Tax-Qualified Nursing Facility Only Long-Term Care Policy Form	MM-201-P-PA et al.
Tax-Qualified Franchise Comprehensive Long-Term Care Policy Form	MM-202-P-PA et al.
Tax-Qualified Franchise Nursing Facility Only Long-Term Care Policy Form	MM-203-P-PA et al.
Tax-Qualified Comprehensive Long-Term Care Policy Form	MM-200-P-1-PA et al.
Tax-Qualified Nursing Facility Only Long-Term Care Policy Form	MM-201-P-1-PA et al.
Tax-Qualified Franchise Comprehensive Long-Term Care Policy Form	MM-202-P-1-PA et al.
Tax-Qualified Franchise Nursing Facility Only Long-Term Care Policy Form	MM-203-P-1-PA et al.

400 Series

Tax-Qualified Comprehensive Long-Term Care Policy Form	MM-400-P-PA et al.
Tax-Qualified Nursing Facility Only Long-Term Care Policy Form	MM-401-P-PA et al.
Tax-Qualified Franchise-Association Discount Comprehensive Long-Term Care Policy Form	MM-402-P-PA et al.
Tax-Qualified Franchise-Association Discount Nursing Facility Only Long-Term Care Policy Form	MM-403-P-PA et al.
Tax-Qualified Franchise-Employer Discount Comprehensive Long-Term Care Policy Form	MM-404-P-PA et al.
Tax-Qualified Franchise-Employer Discount Nursing Facility Only Long-Term Care Policy Form	MM-405-P-PA et al.

500 Series

Tax-Qualified Comprehensive Long-Term Care Policy Form	MM500-P-PA et al.
Tax-Qualified Franchise Comprehensive Long-Term Care Policy Form	MM502-P-PA et al.

511 Series

Tax-Qualified Comprehensive Long-Term Care Policy Form	MM500-P-1-PA et al.
Tax-Qualified Franchise Comprehensive Long-Term Care Policy Form	MM502-P-1-PA et al.

Dear Commissioner Altman:

On behalf of MassMutual, we are submitting the referenced rate filing for your review. These are existing tax-qualified policy forms that provide long-term care coverage. These policy forms were written by MassMutual and issued in Pennsylvania between July 19, 2000 and April 7, 2013. The forms are no longer being marketed in any jurisdiction.

Offices in Principal Cities Worldwide

This work product was prepared to provide assistance to MassMutual. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends Recipient be aided by its own actuary or other qualified professional when reviewing the Milliman work product.

The company is requesting a premium rate increase on the above-listed forms, including all associated riders. These forms are in need of a premium rate increase due to emerging and projected experience running more adverse than previously expected.

The company is requesting a premium rate increase to achieve a rate level consistent with that on its currently marketed 513 Series new business product. The resulting rate increase varies by rate series and all available options and riders. This rate increase is then capped on a seriatim basis such that no insured will receive a rate increase in excess of 100%. The following table provides the distribution, range, and average requested rate increase in Pennsylvania by rate series.

Pennsylvania Rate Increase Request Distribution, Range, and Average Increase by Series^[1]

Rate Increase	All Series	200	400	500	511
0-10%	<1%	0%	0%	1%	0%
11-20%	2	<1	1	3	15
21-30%	5	1	5	7	36
31-40%	6	2	5	12	40
41-50%	5	2	5	12	8
51-60%	6	4	7	12	<1
61-70%	6	3	10	11	0
71-80%	5	4	8	6	0
81-90%	5	4	9	6	0
91-100%	60	79	51	29	0
Minimum	0	13	12	0	12
Maximum	100	100	100	100	52
Average	77	91	80	65	31

[1] As of December 31, 2016 and excludes policies assumed to be paid-up prior to rate increase implementation.

There have been no previous rate revisions on the above-referenced forms. The company is seeking a rate increase at this time to help alleviate the adverse performance on this business.

The company will offer insureds affected by the premium increase the option of reducing their policy benefits to provide flexibility of choice for those insureds who wish to maintain a premium level reasonably similar to what they were paying prior to the rate increase. Options for reducing policy benefits include reducing the benefit period or maximum daily benefit amount, extending the elimination period, and removing or reducing optional riders. The company will offer a contingent benefit upon lapse to insureds that trigger a substantial rate increase. Additionally, the company will voluntarily offer a contingent benefit upon lapse to insureds affected by the rate increase, even if the increase is not considered substantial.

The following items are included with this submission:

- cover letter
- letter from MassMutual authorizing us to submit this filing on their behalf
- actuarial memorandum
- supplement to the actuarial memorandum
- current and proposed premium rate schedules
- Microsoft Excel spreadsheet containing all numerical data
- policyowner notification letter^[1]

[1] Please note that in the future slight variations in language may occur that do not materially change the information being provided to the policyowner. It is our understanding that such variations do not need to be filed with the Department.

The required \$150 retaliatory filing fee will be paid via Electronic Funds Transfer (EFT).



Honorable Jessica Altman
7/30/2018

The contact person for this filing is:

Shawn Stender
Assistant Actuary
Milliman, Inc.
8500 Normandale Lake Blvd., Suite 1850
Minneapolis, MN 55437
(952) 820-3104
shawn.stender@milliman.com

Thank you for your assistance in reviewing this filing.

Respectfully,

A handwritten signature in blue ink that reads 'Missy Gordon'.

Missy Gordon, FSA, MAAA
Principal and Consulting Actuary

MAG/ys

Enclosures

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Actuarial Memorandum

July 30, 2018

<u>Product</u>	<u>Number</u>
200 Series	
Tax-Qualified Comprehensive Long-Term Care Policy Form	MM-200-P-PA et al.
Tax-Qualified Nursing Facility Only Long-Term Care Policy Form	MM-201-P-PA et al.
Tax-Qualified Franchise Comprehensive Long-Term Care Policy Form	MM-202-P-PA et al.
Tax-Qualified Franchise Nursing Facility Only Long-Term Care Policy Form	MM-203-P-PA et al.
Tax-Qualified Comprehensive Long-Term Care Policy Form	MM-200-P-1-PA et al.
Tax-Qualified Nursing Facility Only Long-Term Care Policy Form	MM-201-P-1-PA et al.
Tax-Qualified Franchise Comprehensive Long-Term Care Policy Form	MM-202-P-1-PA et al.
Tax-Qualified Franchise Nursing Facility Only Long-Term Care Policy Form	MM-203-P-1-PA et al.
400 Series	
Tax-Qualified Comprehensive Long-Term Care Policy Form	MM-400-P-PA et al.
Tax-Qualified Nursing Facility Only Long-Term Care Policy Form	MM-401-P-PA et al.
Tax-Qualified Franchise-Association Discount Comprehensive Long-Term Care Policy Form	MM-402-P-PA et al.
Tax-Qualified Franchise-Association Discount Nursing Facility Only Long-Term Care Policy Form	MM-403-P-PA et al.
Tax-Qualified Franchise-Employer Discount Comprehensive Long-Term Care Policy Form	MM-404-P-PA et al.
Tax-Qualified Franchise-Employer Discount Nursing Facility Only Long-Term Care Policy Form	MM-405-P-PA et al.
500 Series	
Tax-Qualified Comprehensive Long-Term Care Policy Form	MM500-P-PA et al.
Tax-Qualified Franchise Comprehensive Long-Term Care Policy Form	MM502-P-PA et al.
511 Series	
Tax-Qualified Comprehensive Long-Term Care Policy Form	MM500-P-1-PA et al.
Tax-Qualified Franchise Comprehensive Long-Term Care Policy Form	MM502-P-1-PA et al.

Massachusetts Mutual Life Insurance Company (MassMutual) is requesting a rate increase on the above listed long-term care policy forms. The company issued these policy forms in Pennsylvania between July 19, 2000 and April 7, 2013.

Nationwide, the company is requesting the same rate increase, except where required due to regulatory restrictions. The nationwide request captures all MassMutual long-term care products that are no longer being marketed in any jurisdiction, which includes the following five rate series: 200, 300, 400, 500, and 511. This actuarial memorandum captures the pooled experience of the above-listed policy forms and similar policy forms issued nationwide across the five rate series.

1. Purpose of Filing

This actuarial memorandum has been prepared for the purpose of demonstrating that the requested rate increase meets the minimum requirements of the 2014 National Association of Insurance Commissioners (NAIC) Long-Term Care Insurance Model Regulation (Model Regulation). The enclosed supplement to the actuarial memorandum demonstrates compliance with the applicable regulatory requirements of this jurisdiction to the extent they differ from the Model Regulation, and includes other commonly requested information of this jurisdiction. It may not be suitable for other purposes.

2. Requested Rate Increase

The company is requesting a premium rate increase to achieve a rate level consistent with that on its currently marketed 513 Series new business product. The resulting rate increase varies by rate series and all available options and riders. This rate increase is then capped on a seriatim basis such that no insured will receive a rate increase in excess of 100%. The company is seeking this rate increase request to help alleviate the adverse performance on this business.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Actuarial Memorandum

July 30, 2018

The table below provides the distribution, range, and average requested rate increases for each series based on the nationwide distribution of business. The enclosed cover letter provides similar information based on the jurisdiction-specific distribution.

Nationwide Rate Increase Request Distribution, Range, and Average Increase by Series^[1]

Rate Increase	All	200	300	400	500	511
0-10%	<1%	0%	<1%	<1%	1%	1%
11-20%	2	<1	<1	1	3	16
21-30%	5	1	<1	2	6	32
31-40%	8	1	1	3	11	40
41-50%	5	2	1	3	12	8
51-60%	5	2	2	4	11	2
61-70%	5	3	2	6	9	0
71-80%	4	4	3	5	7	0
81-90%	4	3	3	6	6	0
91-100%	61	84	88	71	33	0
Minimum	0	12	6	5	0	4
Maximum	100	100	100	100	100	59
Average	77	93	95	89	70	31

[1] As of December 31, 2016 and excludes policies assumed to be paid-up prior to the rate increase implementation date. The enclosed cover letter provides the jurisdiction-specific distribution.

While larger rate increases than requested are needed to alleviate the adverse performance on this business, at this time, the company does not anticipate additional rate increases beyond the current request; however, it will continue to monitor the business and reserves the right to request additional rate increases in the future.

Corresponding rate tables reflecting the current and proposed rate increases for policy forms affected by this rate increase are enclosed with this filing. The proposed rate tables reflect rate increases to bring the rates to a level consistent with that on the 513 Series new business rates. The rate increases will be implemented on a seriatim basis such that no insured will receive more than a 100% rate increase or a rate decrease. The enclosed rate tables do not capture any seriatim caps. The actual rates implemented may vary from those in the enclosed rate tables due to the seriatim caps and implementation rounding algorithms.

The renewal premium rate schedules, assuming the requested increase is implemented, are not greater than the 513 Series premium rate schedules, except for differences attributable to benefits.

3. Description of Benefits

The 200, 300, 400, 500, and 511 Series are existing tax-qualified policy forms that provide long-term care coverage. They are individually and jointly underwritten and provide comprehensive and facility only coverage on a reimbursement basis. Certain policy forms also included a rider to convert to coverage on an indemnity basis. These rate series have benefit eligibility requirements that involve activities of daily living (ADL) deficiencies or cognitive impairment. Waiver of premium is provided when certain benefits are being paid.

A daily benefit amount, benefit period, and elimination period were selected at issue. The available choices for benefit period and elimination period varied by rate series and are shown in Section 21 below.

At issue, the policyowner may have had the option to choose one of the following inflation options, the availability of which varied by rate series as shown in Section 21 below: no inflation, simple 5% inflation, compound 3% inflation, or compound 5% inflation. The simple inflation option provides for benefit levels that increase on each anniversary date by 5% of the daily benefit amount chosen at issue for the life of the insured. The compound inflation option provides for benefit levels that increase on

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Actuarial Memorandum

July 30, 2018

each anniversary date by 3% or 5% compounded annually for the life of the insured. These automatic increasing benefits apply even when the insured is in claim status.

Premiums are paid for the life of the policy, unless the policyowner elected at issue a limited premium payment period, which varies by rate series as shown Section 21. An additional option was available for all premium payment periods in which the policyowner could pay a higher first year premium followed by discounted (reduced) renewal premium thereafter (a.k.a., discounted renewal).

At issue, the policyowner may have been offered the option of selecting riders (e.g., return of premium, shared care) that provide the types of coverage, which vary by rate series, as shown in the enclosed rate tables.

The 200, 300, and 400 Series (a.k.a., pre-500 business) offered joint coverage policies. Joint coverage provides equal coverage for two persons if both apply and are issued coverage under the policy. When one of the joint lives dies or exhausts their benefits or terminates, coverage continues for the remaining insured. The new premium rate will be the premium that would have been charged for an individual policy at the original issue age and risk class of the remaining insured.

The 500 and 511 Series (a.k.a., 500+ business) are participating policy forms. Explicit dividend margin was incorporated into the pricing for the 500+ business that was to be released to policyowners if experience emerged as originally expected in pricing. However, as emerging experience is worse than that expected with the dividend margin such that no dividends have been or are expected to be paid on these policy forms.

Most jurisdictions included Partnership-eligible policy forms or options for each rate series, subject to the individual Partnership requirements of each jurisdiction. Most jurisdictions issued the 200 Series under one policy form, but issued two sets of rates based on issue date. The first set of rates were originally priced in 2000 and the second was subsequently repriced in 2001, where the issue date range of each set is jurisdiction-specific.

A contingent benefit upon lapse (CBUL) will be available to all policyowners at the time of the rate increase.

4. Renewability

These policies are guaranteed renewable for life.

5. Applicability

This rate increase applies to all policies issued on these policy forms in this jurisdiction. The rate changes will apply to the premium of the base policy form and all associated options and riders.

6. Actuarial Assumptions

The following assumptions are used to project the experience shown in this filing.

- a. Morbidity reflects claim costs developed using the 2014 Milliman *Long-Term Care Guidelines (Guidelines)* with adjustments for underwriting selection and an all-lives exposure basis. The claim costs were further adjusted based on historical claim experience by rate series, attained age, policy duration, benefit period, benefit payment type, gender, and underwriting class, to the extent credible. These adjustment factors can be found in Exhibit A-3a of Appendix A to this memorandum.
- b. Mortality Rates reflect the 2012 Individual Annuity Mortality Basic gender-distinct table (2012IAM). The mortality rates were adjusted based on historical experience by attained age, policy duration,

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Actuarial Memorandum

July 30, 2018

gender, underwriting class, and partner status, to the extent credible. These adjustment factors can be found in Exhibit A-1a of Appendix A to this memorandum.

- c. Voluntary Lapse Rates vary by policy duration and partner status. The following table provides lapse rates for lifetime-payment policies.

Duration	Single	Partnered
1	4.00%	1.50%
2	5.50	2.50
3	3.50	2.00
4	3.00	1.50
5	2.50	1.20
6	2.00	0.90
7	1.75	0.70
8	1.25	0.60
9+	0.90	0.50

The lapse rates in the above table were adjusted based on the following criteria for the additional premium payment options:

- For the ten-pay option, a reduction of 50% of the above lapse rates is assumed for durations one through eight, and 0% lapse thereafter.
 - For the twenty-pay option, a reduction of 25% of the above lapse rates is assumed for durations one through fifteen, and 0% lapse thereafter.
 - For the paid-up at age 65 option, a reduction of 25% of the above lapse rates is assumed for all durations with issue ages 60 and lower, and 0% lapse for all durations with issue ages greater than 60.
 - For the discounted renewal option, a reduction of 25% of the above lapse rates is assumed for all durations.
- d. Benefit Expiry Rates reflect assumed policy termination due to exhaustion of benefits on limited benefit period policies. The rates are based on the *Guidelines* and vary by gender, benefit period, and attained age as shown in the following table.

Gender	Benefit Period in Years	Attained Age*										
		<65	65	70	75	80	85	90	95	100	105	110+
Female	2	0.0%	0.0%	0.1%	0.2%	0.4%	1.2%	3.1%	6.1%	9.1%	14.6%	20.0%
	3	0.0	0.0	0.1	0.1	0.3	0.8	2.2	4.7	7.5	14.1	20.0
	4	0.0	0.0	0.0	0.1	0.2	0.6	1.5	3.3	5.7	12.4	20.0
	5	0.0	0.0	0.0	0.1	0.1	0.4	1.1	2.4	4.5	10.1	20.0
	6	0.0	0.0	0.0	0.0	0.1	0.3	0.9	2.1	3.9	7.7	20.0
	10	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.9	1.9	20.0
	Lifetime	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Male	2	0.0	0.0	0.1	0.1	0.3	0.7	1.8	3.3	4.7	7.4	20.0
	3	0.0	0.0	0.0	0.1	0.2	0.4	1.1	2.2	3.5	6.5	20.0
	4	0.0	0.0	0.0	0.0	0.1	0.3	0.7	1.5	2.5	5.4	20.0
	5	0.0	0.0	0.0	0.0	0.1	0.2	0.5	1.1	2.0	4.5	20.0
	6	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.9	1.9	3.6	20.0
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.9	20.0
	Lifetime	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

* The assumption varies by attained age, but is shown every five years for display purposes.

- e. Insured Behavior Due to the Rate Increase. At the time of a rate increase, insureds have the option to elect a CBUL or reduced benefit options (RBO). An increase in morbidity for adverse

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Actuarial Memorandum

July 30, 2018

selection due to the rate increase based on the percentage of insureds that elect CBUL and RBO is assumed.

Insureds who elect a CBUL are modeled as a lapse (i.e., the CBUL benefit is not modeled), which results in a slightly lower lifetime loss ratio than if the CBUL benefit had been modeled.

CBUL and RBO election are functions of rate increase magnitude. Adverse selection associated with the requested increase is a function of CBUL and RBO election. The following provides approximate averages for these assumptions based on the nationwide distribution for all rate series combined: 5% CBUL election rate, 13% RBO election rate, and 3% morbidity increase due to adverse selection.

- f. Interest Rate consistent with the maximum valuation interest rate applicable to the year of issue (ranges from 3.5% to 4.5% and averages 4.1%) is used to demonstrate compliance with the minimum loss ratio requirements.
- g. Annual Improvement is assumed for 10 future years in the mortality and morbidity assumptions. Annual improvement factors vary by attained age based on the G2 improvement scale from the 2012IAM table.
- h. Expenses have not been explicitly projected. Originally filed expense assumptions are assumed to remain appropriate, except that commissions are not paid on the increased premium.
- i. Dividends are not projected in the current experience as the company has not historically paid a dividend and does not anticipate paying a dividend in the future on its long-term care business for the 500+ business.

The above assumptions are based on the experience of policies issued by MassMutual, industry experience, and actuarial judgment. These assumptions are based on the nationwide experience of all long-term care business issued by MassMutual, which includes the 200, 300, 400, 500, 511, and 513 Series. In developing the persistency assumptions, policy termination experience through December 31, 2016 was used. For the morbidity assumption, claim experience through December 31, 2016 with claim runout through December 31, 2017 was used. The above assumptions are deemed reasonable for the particular policy forms in this filing and are considered "most likely" (without explicit margin).

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. Appendix A to this memorandum provides a description of the development of and justification for the assumptions used in this filing.

The company is currently marketing one long-term care product, the 513 Series, in this jurisdiction. A comparison of the projection assumptions used in this filing and those used for pricing the 513 Series product is included in Appendix B to this memorandum.

7. Marketing Method

These policy forms were marketed by agents of MassMutual and/or by independent brokers.

8. Underwriting Description

These policies were individually underwritten with the use of various underwriting tools in addition to the application, which may have included medical records, paramedical functional assessments, cognitive screenings, face-to-face interviews, and/or attending physician statements.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Actuarial Memorandum

July 30, 2018

9. Premiums

Premiums are unisex and payable for life unless the insured selected a limited premium payment period option. The premiums may vary by policy form, issue age, elimination period, benefit period, initial daily benefit amount, inflation option, premium payment option, underwriting class, joint status, discounts (e.g., partner status at issue), home care coverage, and the selection of any riders.

10. Issue Age Range

Issue ages are from 18 to 84.

11. Area Factors

Area factors are not used for these products.

12. Premium Modalization Rules

The following modal factors and percent distributions (based on the nationwide in-force insured count as of December 31, 2016) are applied to the annual premium (AP):

Premium Mode	Modal Factors	Percent Distribution
Annual	1.000*AP	44%
Semi-Annual	0.520*AP	4
Quarterly ^[1]	0.265*AP	9
Monthly ^[1]	0.088*AP	43

[1] Factor may vary based on policy form and payment option.

13. Reserves

Active life reserves and reserves for the election of a CBUL have not been used in the experience exhibits for this rate increase analysis, except as described in the supplement to the actuarial memorandum. 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 (IBNR) reserves have not been used as the incurred claims include paid claim runout through December 31, 2017.

14. Trend Assumptions

As this is not medical insurance, an explicit medical cost trend is not included in the projections.

15. Demonstration of Satisfaction of Loss Ratio Requirements

This filing uses nationwide experience of all policies of the 200, 300, 400, 500, and 511 Series. This pooled experience captures all MassMutual long-term care products that are no longer being marketed in any jurisdiction. Pooling these forms' experience is appropriate as the rate increase request brings the pool to a consistent rate basis (i.e., 513 Series new business product), the policy forms have similar benefits, it is consistent with how MassMutual manages the business, and combining experience increases credibility.

Exhibit I provides actual and projected experience using current assumptions. Actual experience is provided from inception through 2016 (with claim runout through 2017) and then projected on a seriatim basis for 60 years using the current assumptions described above in Section 6. The actual and projected experience is based on nationwide premiums. The after increase projected experience reflects the requested increase by series (shown in Section 2) on a seriatim basis.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Actuarial Memorandum

July 30, 2018

Values in Exhibit I are shown (a) before and (b) after the requested rate increase. Included are calendar year earned premiums, incurred claims, end of year lives, annual loss ratios, and cumulative loss ratios. As shown in Exhibit I, the anticipated lifetime loss ratio with the requested rate increase exceeds the minimum loss ratio required by pre-rate stability regulation.

The following table demonstrates that the lifetime loss ratios by series also exceed the minimum loss ratio required by pre-rate stability regulation. The 'All' row corresponds to that shown in Exhibit I.

Lifetime Loss Ratios at the Maximum Valuation Interest Rate by Series

Series	Before Increase	After Increase
All	161%	119%
200	188	141
300	196	146
400	157	113
500	121	89
511	95	79

Exhibit II provides a demonstration that the requested rate increase meets the 58%/85% minimum loss ratio test under moderately adverse conditions as required by post-rate stability regulation. This exhibit shows that the sum of the accumulated value of incurred claims without the inclusion of active life reserves, and the present value of 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 projected initial earned premium times 58%, and
4. 85% of the present value of projected premium in excess of the projected initial earned premium.

The following table demonstrates that the 58%/85% test is passed by series. The 'All' row corresponds to that shown in Exhibit II. Values in the table are shown in millions of dollars.

58%/85% Test by Series (\$ in millions)

Series	Item 5^[1]	Item 7^[2]	Result^[3]
All	\$3,355	\$7,245	Pass
200	821	2,119	Pass
300	730	1,945	Pass
400	743	1,516	Pass
500	817	1,307	Pass
511	244	358	Pass

[1] Item 5 is the Lifetime Earned Premium Times Prescribed Factor.

[2] Item 7 is Lifetime Incurred Claims with Rate Increase.

[3] Test of whether Item 7 is not less than Item 5.

16. Actual-to-Expected Experience

The following table provides a comparison of actual and projected experience using current assumptions to that expected using original pricing assumptions. Values in the following table are shown (a) before and (b) after the requested rate increase.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Actuarial Memorandum

July 30, 2018

Actual and Expected Loss Ratios by Series

Series	Lifetime Loss Ratio			Actual-to-Expected	
	Before Increase ^[1]	After Increase ^[1]	Expected ^[2]	Before Increase	After Increase
All	146%	109%	57%	2.58	1.92
200	171	129	54	3.15	2.39
300	177	133	56	3.14	2.35
400	129	95	54	2.39	1.76
500	121	89	58	2.10	1.54
511	95	79	69	1.38	1.15

[1] Using current interest assumption on a basis that is consistent with original pricing, which may differ from that used in Exhibit I, as described below.

[2] Projected actual policies sold from issue using original pricing assumptions.

Actual and projected experience in the above table is identical to that described in Exhibit I, except uses a current interest assumption on a basis that is consistent with original pricing. For the pre-500 business, original pricing used an earnings interest rate basis; a current earnings interest rate assumption of 5.0% is used in this table. For the 500+ business, original pricing used a valuation interest rate basis, so a current maximum valuation interest rate assumption as described above in Section 6 (which is also consistent with that used in Exhibit I) is used in this table.

Expected experience uses the actual policies sold and projects from issue on a seriatim basis using the original pricing assumptions for each series. Consistent with the original pricing projections, the expected experience based on original pricing assumptions includes an adjustment for dividend margin assumed in pricing for the 500+ business.

Exhibit III provides a comparison of the current and original pricing assumptions that underlie the actual and expected experience described above.

17. History of Previous Rate Revisions

No prior rate increases have been implemented on these products.

18. Analysis Performed to Consider a Rate Increase

The experience table in Section 16 above demonstrates that experience has been more adverse from that expected using original pricing assumptions as the actual-to-expected (A:E) loss ratios exceed 1.0. The adverse experience for all rate series combined is largely driven by higher than expected persistency and morbidity.

The following table provides a comparison of actual and projected nationwide experience for all rate series combined to that expected in pricing with respect to interest, lapse (combination of voluntary lapse and benefit expiry), mortality, morbidity, and improvement. The current and original pricing assumptions are provided in Exhibit III.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Actuarial Memorandum

July 30, 2018

Impact of Changing from Pricing to Current Assumptions

Scenario	Lifetime Loss Ratio (LLR)	Incremental Impact on the LLR^[1]	Increase Needed^[2]
Original pricing assumptions	57%	N/A	N/A
Historical experience through 2016 & projections with pricing assumptions ^[3]	62	10%	35%
Historical experience through 2016 & projections with pricing assumptions except for current:			
Interest	68	10	33
Interest, lapse	76	12	38
Interest, lapse, mortality	108	41	120
Interest, lapse, mortality, morbidity	151	41	117
Interest, lapse, mortality, morbidity, improvement	146	-3	-10
Historical experience through 2016 & projections with all current most-likely assumptions ^[4]	146	158	444

[1] Calculated as the ratio of the lifetime loss ratio in a given row to that in the row immediately above it less one.

[2] Shows the rate increase needed to reproduce the lifetime loss ratio in the row immediately above it. Calculated without regard to CBUL, RBO, adverse selection, and higher waiver claims due to the needed rate increase.

[3] This row reflects actual historical experience and pricing assumptions projected from the valuation date. For participating rate series (500+), the explicit dividend margin assumed in pricing was removed (reduces the lifetime loss ratio) as no dividends have been or are expected to be paid on these policy forms.

[4] This row is calculated in regards to the pricing lifetime loss ratio of 57%.

For the business subject to rate stability regulation, an analysis of the projected loss ratio compared to that assumed at the time of original pricing revealed that experience has unfolded more than moderately adverse and crossed the original pricing threshold for which the company could consider a rate increase.

Based on our understanding of the available original pricing materials and actuarial judgment, the assumed original pricing threshold before which a rate increase may be considered is a 10% increase in the original pricing lifetime loss ratio for the pre-500 Series, a 13% increase for the 500 Series, and a 14% increase for the 511 Series. Section 15 demonstrates that the lifetime loss ratios are well in excess of this assumed original pricing threshold. That is, the before increase A:E exceeds 1.10 for the pre-500 Series, 1.13 for the 500 Series, and 1.14 for the 511 Series.

19. Average Annual Premium in Pennsylvania (Based on December 31, 2016 In-Force^[1])

The number of insureds and the corresponding average annual premium that will be affected by this rate increase filing are:

Rate Series	Number of Insureds	Before Increase Premium	After Increase Premium
200 Series	3,109	\$1,528	\$2,920
400 Series	846	2,355	4,229
500 Series	1,168	2,666	4,387
511 Series	261	2,850	3,722
All	5,384	1,969	3,483

[1] Excludes policies assumed to be paid up prior to implementation of the requested rate increase.

20. Proposed Effective Date

This rate increase will apply to policies on their next policy anniversary date following at least a 90-day policyowner notification period following disposition of this filing by the department of insurance.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Actuarial Memorandum

July 30, 2018

21. Distribution of Business as of December 31, 2016 (Based on Nationwide In-Force Insured Count)

Issue Ages	Percent Distribution					
	All	200	300	400	500	511
<40	2%	1%	2%	2%	2%	3%
40-44	4	4	5	5	4	5
45-49	11	10	13	11	9	9
50-54	23	22	24	25	20	21
55-59	30	29	31	29	29	25
60-64	20	21	18	19	24	23
65-69	8	9	6	7	10	12
70-74	2	3	1	2	2	2
75-79	<1	1	<1	<1	<1	<1
80+	<1	<1	<1	<1	<1	0
Average Issue Age	56	56	56	55	57	56

Elimination Period	Percent Distribution					
	All	200	300	400	500	511
0-Day	1%	2%	1%	1%	N/A	N/A
30-Day	8	13	12	6	3	2
60-Day	4	4	4	4	3	2
90-Day	83	81	79	83	87	91
180-Day	4	<1	4	6	7	5

Benefit Period	Percent Distribution					
	All	200	300	400	500	511
2 Years	2%	N/A	N/A	N/A	5%	5%
3 Years	14	14	8	9	20	29
4 Years	6	N/A	5	3	12	13
5 Years	8	N/A	N/A	6	24	20
6 Years	10	11	8	6	9	24
10 Years	2	N/A	N/A	3	4	1
Lifetime	58	75	79	73	26	8

Inflation Option	Percent Distribution					
	All	200	300	400	500	511
None	10%	11%	6%	12%	11%	11%
Simple 5%	30	38	32	35	25	N/A
Compound 3%	10	N/A	N/A	N/A	15	72
Compound 5%	50	51	62	53	49	17

Premium Payment Duration	Percent Distribution					
	All	200	300	400	500	511
Ten-Pay	13%	10%	18%	16%	12%	5%
Twenty-Pay	1	1	1	1	N/A	N/A
Pay to Age 65	<1	N/A	N/A	N/A	2	1
Lifetime-Pay	86	89	81	83	86	94

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Actuarial Memorandum

July 30, 2018

Discounted Renewal Premium Payment Option	Option Election Rate					
	All	200	300	400	500	511
	4%	5%	5%	7%	1%	<1%

Coverage Type	Percent Distribution					
	All	200	300	400	500	511
Facility Only	1%	2%	1%	1%	2%	1%
Comprehensive	99	98	99	99	98	99

Benefit Type	Percent Distribution					
	All	200	300	400	500	511
Indemnity	29%	22%	45%	46%	19%	N/A
Reimbursement	71	78	55	54	81	100%

Underwriting Class ^[1]	Percent Distribution					
	All	200	300	400	500	511
Preferred	59%	75%	61%	58%	48%	42%
Standard	35	21	34	37	44	47
Substandard	6	4	5	5	8	11

[1] At issue, the labels may have differed, but were grouped into these three generic labels.

22. Number of Insureds and Annualized Premium (Based on December 31, 2016 In-Force^[1])

The number of insureds and annualized premium that will be affected by this rate increase filing are:

Series	Number of Insureds	Annualized Premium
Pennsylvania		
200	3,109	\$4,750,756
400	846	1,992,131
500	1,168	3,113,477
511	261	743,913
Total	5,384	10,600,276
Nationwide		
200	18,177	\$30,422,853
300	14,234	26,720,648
400	12,294	30,219,392
500	18,208	57,728,588
511	6,605	19,167,127
Total	69,518	164,278,608

[1] Excludes policies assumed to be paid up prior to implementation of the requested rate increase.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Actuarial Memorandum

July 30, 2018

23. Actuarial Certification

I am a Principal and Consulting Actuary for Milliman, Inc. and retained by MassMutual to render an opinion with regard to long-term care insurance rates. I am a member of the American Academy of Actuaries. I meet the Academy's qualification standards to render this actuarial opinion and am familiar with the requirements for filing long-term care insurance premiums and rate increases.

This memorandum has been prepared in conformity with all applicable Actuarial Standards of Practice, including Actuarial Standards of Practice No. 8, "Regulatory Filings for Health Benefits, Accident and Health Insurance, and Entities Providing Health Benefits" and 18, "Long-Term Care Insurance".

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 this jurisdiction and the rules of the department of insurance.

In my opinion, the rates are not excessive or unfairly discriminatory, and bear reasonable relationship to the benefits based on the loss ratio standards of this jurisdiction.

This filing will enhance premium adequacy, but may not be sufficient to prevent future rate action. Additional rate increases are needed to certify that rates will remain stable under moderately adverse conditions.

In forming my opinion, I have used actuarial assumptions and actuarial methods (which gave consideration to policy design, underwriting, and claim adjudication) and such tests of the actuarial calculations as I considered necessary. Based on these assumptions, or statutory requirements where necessary, the premium rate filing is in compliance with the loss ratio standards of this jurisdiction.

I have relied on data and information provided by MassMutual and its third party administrator to develop this memorandum, including but not limited to management's view of when a rate change may be considered, policy design, underwriting and claim adjudication process, seriatim in-force data, claim data, dividend expectation, and the company's long-term earnings rate. I have not audited or independently verified the data and information provided, but have reviewed it for reasonableness.

The basis for contract reserves has been previously filed and there is no anticipation of any changes.



Missy Gordon, FSA, MAAA
Principal and Consulting Actuary

Date: July 30, 2018

Exhibit I-a
Massachusetts Mutual Life Insurance Company
Actual and Projected Experience by Calendar Year
Nationwide Experience Before Requested Rate Increase
All Rate Series Combined

	Calendar Year	Actual or Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
Historical Experience	2000	613,240	0	0%	1,775	0%
	2001	8,395,491	64,652	1%	7,642	1%
	2002	21,414,123	527,514	2%	15,522	2%
	2003	38,423,209	1,663,767	4%	24,571	3%
	2004	58,600,776	1,499,223	3%	34,074	3%
	2005	88,587,224	5,917,061	7%	45,088	4%
	2006	108,266,631	4,124,523	4%	50,082	4%
	2007	121,895,279	9,601,387	8%	54,405	5%
	2008	137,228,636	9,464,000	7%	58,834	6%
	2009	146,783,646	14,396,475	10%	61,275	6%
	2010	157,044,149	18,532,382	12%	64,748	7%
	2011	170,045,482	18,642,615	11%	70,309	8%
	2012	193,342,609	23,728,913	12%	77,353	8%
2013	201,251,429	26,201,269	13%	79,455	9%	
2014	196,209,517	34,432,838	18%	78,588	10%	
2015	183,819,465	40,611,186	22%	77,807	11%	
2016	174,917,980	38,574,940	22%	77,020	12%	
Projected Future Experience	2017	172,241,693	54,502,773	32%	75,896	13%
	2018	165,047,886	64,573,658	39%	74,783	14%
	2019	159,193,087	76,343,329	48%	73,661	16%
	2020	153,983,243	89,588,731	58%	72,510	17%
	2021	147,746,139	104,201,577	71%	71,315	19%
	2022	137,446,581	120,433,978	88%	70,064	22%
	2023	132,732,324	138,582,927	104%	68,748	24%
	2024	129,872,384	158,883,088	122%	67,363	26%
	2025	126,757,990	181,614,373	143%	65,906	29%
	2026	123,622,884	206,607,058	167%	64,374	32%
	2027	120,368,173	235,581,471	196%	62,755	35%
	2028	116,967,040	269,002,445	230%	61,041	39%
	2029	113,456,899	305,504,461	269%	59,228	43%
	2030	109,825,829	344,664,339	314%	57,316	47%
	2031	106,008,521	386,163,349	364%	55,304	51%
	2032	101,998,825	429,058,224	421%	53,195	56%
	2033	97,852,727	473,046,524	483%	50,994	61%
	2034	93,538,391	517,519,441	553%	48,705	66%
	2035	89,062,425	560,960,575	630%	46,338	71%
	2036	84,436,790	602,251,794	713%	43,902	76%
	2037	79,713,710	640,558,320	804%	41,411	82%
	2038	74,897,097	675,013,035	901%	38,880	87%
	2039	70,011,512	704,314,318	1,006%	36,326	93%
	2040	65,100,920	727,055,899	1,117%	33,766	99%
	2041	60,193,802	742,866,216	1,234%	31,221	104%
	2042	55,333,340	751,591,594	1,358%	28,709	109%
	2043	50,562,872	753,035,208	1,489%	26,251	114%
2044	45,918,427	747,286,278	1,627%	23,864	119%	
2045	41,436,080	734,525,898	1,773%	21,566	124%	
2046	37,149,904	715,189,527	1,925%	19,373	128%	
2047	33,089,359	689,963,515	2,085%	17,298	132%	
2048	29,278,136	659,215,478	2,252%	15,351	136%	
2049	25,733,967	624,218,429	2,426%	13,540	139%	
2050	22,468,351	585,694,514	2,607%	11,871	142%	
2051	19,487,186	545,003,489	2,797%	10,344	145%	
2052-2056	62,359,938	2,096,396,469	3,362%	33,661	154%	
2057-2061	25,527,035	1,172,994,097	4,595%	14,417	158%	
2062-2066	9,257,249	561,639,676	6,067%	5,517	160%	
2067-2071	3,137,808	234,707,490	7,480%	1,949	161%	
2072-2076	1,014,695	85,792,699	8,455%	651	161%	

With Interest Accum./Disc. To 12/31/2016

History	2,606,149,452	300,048,738	12%
Future	2,054,217,459	7,196,453,881	350%
Lifetime	4,660,366,911	7,496,502,619	161%

**Exhibit I-b
Massachusetts Mutual Life Insurance Company
Actual and Projected Experience by Calendar Year
Nationwide Experience After Requested Rate Increase
All Rate Series Combined**

	Calendar Year	Actual or Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
Historical Experience	2000	613,240	0	0%	1,775	0%
	2001	8,395,491	64,652	1%	7,642	1%
	2002	21,414,123	527,514	2%	15,522	2%
	2003	38,423,209	1,663,767	4%	24,571	3%
	2004	58,600,776	1,499,223	3%	34,074	3%
	2005	88,587,224	5,917,061	7%	45,088	4%
	2006	108,266,631	4,124,523	4%	50,082	4%
	2007	121,895,279	9,601,387	8%	54,405	5%
	2008	137,228,636	9,464,000	7%	58,834	6%
	2009	146,783,646	14,396,475	10%	61,275	6%
	2010	157,044,149	18,532,382	12%	64,748	7%
	2011	170,045,482	18,642,615	11%	70,309	8%
	2012	193,342,609	23,728,913	12%	77,353	8%
2013	201,251,429	26,201,269	13%	79,455	9%	
2014	196,209,517	34,432,838	18%	78,588	10%	
2015	183,819,465	40,611,186	22%	77,807	11%	
2016	174,917,980	38,574,940	22%	77,020	12%	
Projected Future Experience	2017	172,241,693	54,502,773	32%	75,896	13%
	2018	165,047,886	64,573,658	39%	74,783	14%
	2019	193,905,673	69,864,427	36%	69,593	15%
	2020	219,884,359	74,797,204	34%	68,507	16%
	2021	209,608,788	86,868,963	41%	67,380	18%
	2022	192,251,573	100,252,490	52%	66,200	19%
	2023	185,256,046	115,223,460	62%	64,959	21%
	2024	181,165,775	131,965,598	73%	63,654	22%
	2025	176,650,552	150,706,199	85%	62,280	24%
	2026	172,174,308	171,313,984	100%	60,835	26%
	2027	167,573,253	195,218,527	116%	59,310	29%
	2028	162,766,675	222,801,144	137%	57,693	31%
	2029	157,844,724	252,934,816	160%	55,984	34%
	2030	152,798,932	285,289,591	187%	54,182	37%
	2031	147,499,211	319,603,964	217%	52,285	40%
	2032	141,934,047	355,112,169	250%	50,298	43%
	2033	136,199,570	391,578,105	288%	48,223	47%
	2034	130,229,439	428,512,082	329%	46,065	50%
	2035	124,031,369	464,671,676	375%	43,834	54%
	2036	117,615,741	499,147,320	424%	41,537	58%
	2037	111,075,348	531,236,282	478%	39,188	62%
	2038	104,402,975	560,226,140	537%	36,801	66%
	2039	97,626,961	585,041,762	599%	34,391	70%
	2040	90,813,881	604,503,781	666%	31,976	74%
	2041	83,998,197	618,268,543	736%	29,574	78%
	2042	77,243,782	626,199,721	811%	27,203	81%
2043	70,608,758	628,123,912	890%	24,881	85%	
2044	64,143,595	624,119,494	973%	22,627	88%	
2045	57,898,999	614,301,538	1,061%	20,456	92%	
2046	51,922,915	598,999,614	1,154%	18,383	95%	
2047	46,256,958	578,751,855	1,251%	16,421	98%	
2048	40,934,871	553,860,871	1,353%	14,580	100%	
2049	35,982,176	525,379,988	1,460%	12,866	103%	
2050	31,415,738	493,889,217	1,572%	11,285	105%	
2051	27,244,607	460,485,896	1,690%	9,839	107%	
2052-2056	87,099,966	1,782,225,558	2,046%	32,070	114%	
2057-2061	35,505,612	1,008,831,723	2,841%	13,781	117%	
2062-2066	12,782,679	488,059,780	3,818%	5,290	119%	
2067-2071	4,292,602	205,074,360	4,777%	1,874	119%	
2072-2076	1,372,527	74,896,024	5,457%	627	119%	

With Interest Accum./Disc. To 12/31/2016

History	2,606,149,452	300,048,738	12%
Future	2,714,409,444	6,039,206,031	222%
Lifetime	5,320,558,896	6,339,254,769	119%

Exhibit II
Demonstration that the Requested Rate Increase Passes the 58%/85% Loss Ratio Minimum
Massachusetts Mutual Life Insurance Company
All Rate Series Combined Nationwide Experience

1	Accumulated value of initial earned premium	2,606,149,452	x	58%	=	1,511,566,682
2a	Accumulated value of earned premium	2,606,149,452				
2b	Accumulated value of prior premium rate schedule increases (2a - 1)	0	x	85%	=	0
3	Present value of future projected initial earned premium	1,718,816,688	x	58%	=	996,913,679
4a	Present value of future projected premium	2,714,409,444				
4b	Present value of future projected premium in excess of the projected initial earned premiums (4a - 3)	995,592,757	x	85%	=	846,253,843
5	Lifetime Earned Premium Times Prescribed Factor: Sum of 1, 2b, 3, and 4b					3,354,734,204
6a	Accumulated value of incurred claims without the inclusion of active life reserves					300,048,738
6b	Present value of future projected incurred claims without the inclusion of active life reserves					6,945,086,935
7	Lifetime Incurred Claims with Rate Increase: Sum 6a and 6b					7,245,135,673
8	Test: 7 is not less than 5					Pass

Items 2a, 4a, and 6a are consistent with the accumulated and present values shown in Exhibit I-b.

All accumulated or present values use the maximum valuation interest rate for contract reserves applicable for the year of issue, which ranges from 3.5% to 4.5%.

Item 3 reflects the impact of CBUL and RBO to align persistency with that in Item 4a.

Item 6b is 15% higher than incurred claims shown in Exhibit I-b to reflect moderately adverse conditions.

**Exhibit III
Massachusetts Mutual Life Insurance Company
Comparison of Current and Original Pricing Assumptions**

		Morbidity														
Current Assumptions	All	Claim costs are developed using the 2014 Milliman <i>Long-Term Care Guidelines (Guidelines)</i> with adjustments for underwriting selection and an all-lives exposure basis. The claim costs were further adjusted based on historical claim experience by rate series, attained age, policy duration, benefit period, benefit payment type, gender, and underwriting class, to the extent credible. An exhibit containing the adjustment factors is provided in Appendix A to the actuarial memorandum.														
Original Assumptions	200 Series 300 Series 400 Series	Claim costs were developed using The Reports of the Society of Actuaries and actuarial judgment. The following are durational morbidity factors: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Duration</th> <th style="text-align: center;">Factor</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">1</td><td style="text-align: center;">0.10</td></tr> <tr><td style="text-align: center;">2</td><td style="text-align: center;">0.20</td></tr> <tr><td style="text-align: center;">3</td><td style="text-align: center;">0.40</td></tr> <tr><td style="text-align: center;">4</td><td style="text-align: center;">0.60</td></tr> <tr><td style="text-align: center;">5</td><td style="text-align: center;">0.80</td></tr> <tr><td style="text-align: center;">6+</td><td style="text-align: center;">1.00</td></tr> </tbody> </table>	Duration	Factor	1	0.10	2	0.20	3	0.40	4	0.60	5	0.80	6+	1.00
	Duration	Factor														
	1	0.10														
2	0.20															
3	0.40															
4	0.60															
5	0.80															
6+	1.00															
500 Series	Claim costs were developed starting with the 400 Series claim costs and were modified based on experience of the company's reinsurance carrier.															
511 Series	The morbidity assumption was derived using industry experience as reported in the Intercompany Study 1984-2004 published by the Society of Actuaries Long Term Care Experience Committee (2004 Study) and adjusted, to the extent credible, by the aggregate experience of the company's reinsurer.															
		Mortality														
Current Assumptions	All	Mortality Rates reflect the 2012 Individual Annuity Mortality Basic gender-distinct table (2012IAM). The mortality rates were adjusted based on historical experience by attained age, policy duration, gender, underwriting class, and partner status, to the extent credible. An exhibit containing the adjustment factors is provided in Appendix A to the actuarial memorandum.														
Original Assumptions	200 Series 300 Series 400 Series	1975-80 Select and Ultimate mortality table.														
	500 Series	1994 Group Annuity Mortality (GAM) Static gender-distinct table. 80% of Annuity 2000 (A2000) Mortality table is used for active lives along with underwriting selection. Disabled Life Mortality is assumed to be the lesser of the claim termination rate and a multiple of the active mortality rate. The multiple varies by claim termination age. For claim termination ages less than or equal to 75, the multiple is 20.0. For claim termination ages greater than 90, the multiple is 5.0. The multiple grades linearly from ages 75 to 90.														
	511 Series	A2000 Mortality table is used for active lives along with adjustments by attained age and gender. The disabled mortality assumption is derived using industry experience as reported in the 2004 Study.														

**Exhibit III
Massachusetts Mutual Life Insurance Company
Comparison of Current and Original Pricing Assumptions**

Current Assumptions	All
----------------------------	-----

Lapse Rates		
Voluntary lapse rates (excludes benefit expiry) vary by policy duration and partner status.		
Lifetime-Payment Lapse Rates		
Duration	Single	Partnered
1	4.00%	1.50%
2	5.50%	2.50%
3	3.50%	2.00%
4	3.00%	1.50%
5	2.50%	1.20%
6	2.00%	0.90%
7	1.75%	0.70%
8	1.25%	0.60%
9+	0.90%	0.50%
For the ten-pay option, a reduction of 50% of the above lapse rates is assumed for durations one through eight, and 0% lapse thereafter. For the twenty-pay option, a reduction of 25% of the above lapse rates is assumed for durations one through fifteen, and 0% lapse thereafter. For the paid up at age 65 option, a reduction of 25% of these lapse rates was assumed until age 60, and 0% lapse thereafter. For the non-level payment option, a reduction of 25% of the above lapse rates is assumed for all durations.		

Original Assumptions	200 Series 300 Series
	400 Series

Lapse Rates			
Lapse rates vary by duration. Lapse rates for the lifetime-payment option are provided in the table below.			
Duration	Lapse Rates		
1	8.00%		
2	6.00%		
3	5.00%		
4	4.00%		
5+	3.50%		
For limited-pay policies, 2.00% lapse is assumed during the premium payment period.			
Lapse rates vary by duration.			
Duration	Lapse Rates		
	Lifetime	10 Pay	20 Pay
1	7.00%	2.00%	2.00%
2	4.00%	2.00%	2.00%
3	3.00%	2.00%	2.00%
4	2.50%	2.00%	2.00%
5	2.00%	2.00%	2.00%
6	2.00%	1.50%	1.50%
7	2.00%	1.25%	1.25%
8	2.00%	1.00%	1.00%
9	2.00%	1.00%	1.00%
10	2.00%	0.00%	1.00%
11	2.00%	0.00%	1.00%
12	2.00%	0.00%	1.00%
13	2.00%	0.00%	1.00%
14	2.00%	0.00%	1.00%
15	2.00%	0.00%	1.00%
16+	2.00%	0.00%	0.00%

**Exhibit III
Massachusetts Mutual Life Insurance Company
Comparison of Current and Original Pricing Assumptions**

Lapse Rates Continued

Voluntary lapse rates vary by duration and issue age. Lapse rates for the lifetime-payment option are provided in the table below.

Duration	Lifetime-Payment Lapse Rates									
	Issue Ages									
	<40	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+
0	7.50%	5.50%	3.75%	3.00%	2.50%	2.50%	3.25%	4.50%	5.50%	7.75%
1	5.75%	4.25%	3.00%	2.25%	2.00%	2.00%	2.50%	3.50%	4.50%	6.00%
2	4.25%	3.25%	2.25%	1.75%	1.50%	1.50%	1.75%	2.50%	3.25%	4.25%
3	3.25%	2.25%	1.75%	1.25%	1.00%	1.00%	1.25%	2.00%	2.50%	3.25%
4	2.00%	1.50%	1.00%	0.75%	0.75%	0.75%	1.00%	1.25%	1.50%	2.25%
5	1.75%	1.25%	0.75%	0.65%	0.65%	0.65%	0.75%	1.00%	1.25%	2.00%
6	1.50%	1.00%	0.65%	0.65%	0.65%	0.65%	0.65%	0.75%	1.00%	1.75%
7	1.25%	0.75%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.75%	1.50%
8	1.00%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	1.25%
9	0.75%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	1.00%
10	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.75%
11+	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%

For limited-pay policies, the voluntary lapse rates are 3.5% in the first year and 0% thereafter.

Voluntary lapse rates vary by duration and issue age.

Pol Dur	Lifetime-Payment Lapse Rates									
	Issue Ages									
	<40	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+
0	8.60%	4.50%	3.70%	3.55%	2.85%	3.50%	3.50%	3.85%	4.05%	3.55%
1	5.55%	4.15%	3.60%	2.90%	2.40%	2.35%	2.75%	3.15%	3.00%	3.10%
2	3.55%	3.00%	2.25%	2.10%	1.80%	1.85%	1.95%	1.95%	2.05%	2.05%
3	3.30%	2.05%	2.15%	1.70%	1.50%	1.55%	1.60%	1.80%	1.85%	1.75%
4	2.15%	1.95%	1.70%	1.35%	1.05%	1.00%	1.20%	1.15%	1.20%	1.35%
5	2.15%	1.95%	1.60%	1.10%	1.00%	1.00%	1.10%	1.15%	1.15%	1.25%
6	2.15%	1.95%	1.60%	1.10%	1.00%	1.00%	1.10%	1.15%	1.15%	1.25%
7	1.35%	1.35%	1.25%	1.05%	0.95%	0.90%	0.95%	1.05%	1.00%	1.00%
8	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
9	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%
10+	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%

Pol Dur	Limited-Payment Lapse Rates									
	Issue Ages									
	<40	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+
0	3.20%	2.65%	2.30%	2.00%	1.85%	1.90%	2.15%	2.30%	2.35%	2.15%
1	2.85%	2.45%	2.05%	1.75%	1.55%	1.60%	1.70%	1.90%	2.00%	1.85%
2	2.30%	1.80%	1.55%	1.20%	1.10%	1.20%	1.25%	1.30%	1.70%	1.30%
3	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
4	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%
5	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%
6	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%
7+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Original Assumptions

500 Series

511 Series

**Exhibit III
Massachusetts Mutual Life Insurance Company
Comparison of Current and Original Pricing Assumptions**

Current Assumptions	All
Original Assumptions	All

Benefit Expiry Rates	
Benefit expiry rates reflect assumed policy termination due to exhaustion of benefits on limited benefit period policies. The rates are based on the 2014 <i>Guidelines</i> and vary by gender, benefit period, and attained age. A table containing the benefit expiry rates is provided in Section 6 of the actuarial memorandum.	
An explicit benefit expiry assumption was not included in the original pricing memoranda.	

Current Assumptions	All
Original Assumptions	200 Series 300 Series 400 Series 500 Series 511 Series

Interest Rate																			
<table border="1"> <thead> <tr> <th>Series</th> <th>Maximum Valuation at Issue^[1]</th> <th>Current^[2]</th> </tr> </thead> <tbody> <tr> <td>200</td> <td>4.5%</td> <td>5.0%</td> </tr> <tr> <td>300</td> <td>4.5%</td> <td>5.0%</td> </tr> <tr> <td>400</td> <td>4.1%</td> <td>5.0%</td> </tr> <tr> <td>500</td> <td>4.0%</td> <td>4.0%</td> </tr> <tr> <td>511</td> <td>3.7%</td> <td>3.7%</td> </tr> </tbody> </table>	Series	Maximum Valuation at Issue ^[1]	Current ^[2]	200	4.5%	5.0%	300	4.5%	5.0%	400	4.1%	5.0%	500	4.0%	4.0%	511	3.7%	3.7%	
Series	Maximum Valuation at Issue ^[1]	Current ^[2]																	
200	4.5%	5.0%																	
300	4.5%	5.0%																	
400	4.1%	5.0%																	
500	4.0%	4.0%																	
511	3.7%	3.7%																	
<p><i>[1] Average interest rates by series are shown. Interest rate varies by policy from 3.5% to 4.5% and is based on policy issue date.</i></p> <p><i>[2] Basis that is consistent with original pricing, which is earnings rate for pre-500 and maximum valuation rate for 500+.</i></p>																			
6.5% earnings rate 6.0% earnings rate 5.0% earnings rate 4.0% maximum valuation rate 4.0% maximum valuation rate																			

Current Assumptions	All
Original Assumptions	All

Improvement	
Annual improvement in the mortality and morbidity assumptions is assumed for 10 future years. Annual improvement factors vary by attained age based on the G2 improvement scale from the 2012IAM table.	
An annual improvement assumption was not included in pricing.	

Appendix A Development and Justification of Current Assumptions

The current actuarial assumptions used in this filing were developed independently by Milliman.

The persistency and morbidity assumptions were developed using historical experience on MassMutual policies. Where actual experience had low credibility or did not exist, experience on other policy forms issued by MassMutual or industry experience was considered. Historical experience through December 31, 2016 was used in the assumption development and morbidity experience included claim runout through December 31, 2017. Experience on all of MassMutual's long-term care products, including its currently marketed 513 Series product, was combined in determining the assumptions described herein. As such, for the purposes of this Appendix, "500+ Series" experience is defined as the combined experience of the 500, 511, and 513 Series.

Improvement (mortality and morbidity), benefit expiry, and rate increase dependent assumptions were developed using industry experience and actuarial judgment.

Predictive analytics was used in the development of the mortality and morbidity assumptions. The voluntary lapse assumption utilized traditional techniques and credibility measures.

The rest of this appendix provides details on the development and justification of the current assumptions.

Persistency

The assumptions for mortality and voluntary lapse were developed based on MassMutual's historical experience through December 31, 2016. The benefit expiry assumption was developed using the 2014 Milliman *Long-Term Care Guidelines (Guidelines)*.

Mortality

The mortality assumption utilizes the 2012 Individual Annuity Mortality Basic gender-distinct table (2012IAM) and experience-adjustment factors to be applied to 2012IAM. To develop the experience-adjustment factors, we used predictive analytics as described in the Predictive Analytics section below.

Exhibit A-1 supports the mortality assumption and provides the following information for all rate series by partner (marital) status, gender, policy duration, attained age band, underwriting class, and rate series:

- Exhibit A-1a – Provides the adjustment factors that are to be applied to the 2012IAM hazard rates; the adjusted hazard rates are converted back into mortality probabilities to create the adjusted mortality assumption.
- Exhibit A-1b
 - Policy year exposure [A] reflects the length of time a covered life is exposed to the risk of death (i.e., exact exposure basis).
 - Actual deaths [B]
 - Mortality probabilities underlying actual experience [C], 2012IAM [D], and the adjusted assumption [E]
Mortality probabilities were calculated by first calculating the hazard rate of mortality, then transforming into a probability. For example, the actual mortality probability $[C] = 1 - \text{EXP}(-([B] / [A]))$.
 - Actual-to-expected (A:E) ratios are calculated as actual mortality probabilities to the 2012IAM mortality probabilities [F] and the adjusted assumption [G]. The adjusted A:E [G] provides an indication of fit. This fit will not be perfect (i.e., ratio deviates from 1.0) because the main goal is to develop an assumption that generalizes well to new data by balancing assumption complexity and fit on the historical experience.

Lifetime-Pay Voluntary Lapse

Exhibit A-2a(i) provides total exposure, composite termination probabilities, expected mortality probabilities, derived voluntary lapse probabilities, credibility percent, and smoothed voluntary lapse probabilities for single (without a partner) policies by duration. This exhibit includes experience for policies with a lifetime premium payment option. Exhibit A-2a(ii) provides similar information for partnered (married) policies.

In general, the smoothed voluntary lapse probabilities were set in such a way that the combined-duration smoothed probabilities were close to the derived voluntary lapse probabilities (see the rows at the bottom of the exhibits). In developing the ultimate (duration 9+) voluntary lapse probability, the actual voluntary lapse experience was considered, to the extent credible.

Appendix A

Development and Justification of Current Assumptions

To develop derived voluntary lapse probabilities, the actual composite terminations were used, where composite terminations represent all terminations with the exclusion of benefit expiries; a separate benefit expiry assumption was developed based on the *Guidelines* as described below.

The actual composite termination probabilities were calculated by transforming hazard rates as follows:

$$\text{Annualized Composite Termination Probability} = 1 - \text{EXP}(-(\text{Actual Composite Termination} / \text{Exposure}))$$

Actual composite terminations (excluding benefit expiry) were assigned to the duration in which it occurred. Each death or voluntary lapse contributes 1.0 to the actual termination count. Exposure reflects an exact exposure basis.

The expected mortality probability corresponds to that underlying the adjusted assumption described in the Mortality section above; that is, 2012IAM with the experience-adjustment factors in Exhibit A-1a.

The derived voluntary lapse probability was then calculated according to the following formula:

$$\text{Derived Voluntary Lapse Probability} = \frac{1 - (1 - \text{Composite Termination Probability})}{1 - \text{Expected Mortality Probability}}$$

Other Payment Options Voluntary Lapse

The smoothed lapse probabilities for other premium payment options (i.e., limited and discounted renewal premium payment options) are a scalar of the lifetime-pay lapse probabilities shown in Exhibit A-2a.

For the 10-pay option, the scalars were developed from a comparison of the lifetime-pay derived lapse probabilities to the 10-pay derived lapse probabilities based on MassMutual experience. Exhibit A-2b provides similar information as Exhibit A-2a, but for policies with a 10-year premium payment period.

For the 20-pay, paid-up at age 65, and discounted renewal payment options, termination experience was of limited credibility. As such, scalars based on actuarial judgment were developed for these options to apply to the lifetime-pay lapse rates. These options are immaterial to the projections for this block of business as they account for <5% of the in-force distribution of business as of December 31, 2016.

The relationships for each payment option were used to develop the smoothed lapse assumptions for the 10-pay, 20-pay, paid-up at age 65, and discounted renewal options detailed in Section 6 of the actuarial memorandum. For insureds with a limited payment duration and the discounted renewal payment option, both scalars are applied to the base lifetime-pay lapse rate.

Benefit Expiry

Benefit expiry probabilities reflect assumed policy lapses due to exhaustion of benefits based on the 2014 *Guidelines* and vary by attained age, gender, and benefit period. Policies with lifetime benefits do not have an expiry assumption (i.e., rate of 0%).

Morbidity

The morbidity assumption uses claim costs from the 2014 *Guidelines* with experience-adjustment factors based on MassMutual experience. To develop the experience-adjustment factors, we used predictive analytics as described in the Predictive Analytics section below.

Exhibit A-3 supports the morbidity assumption and provides the adjustment factors as well as an A:E exhibit for the key experience buckets used in the development of the factors:

- Exhibit A-3a – Provides the adjustment factors that are to be applied to the 2014 *Guidelines* claim costs.
- Exhibit A-3b
 - Exposure [A] reflects the length of time a covered life is in force (i.e., an exact exposure basis).
 - Actual incurred claim counts [B] and dollars [C] are based on historical claim experience from inception through December 31, 2016, with runout through December 31, 2017. Actual incurred claim dollars were valued as paid claims plus claim reserves. Paid claims and claim reserves were discounted to the year of incurral.

Appendix A Development and Justification of Current Assumptions

- 2014 *Guidelines* expected incurred claims [D] are valued as the 2014 *Guidelines* claim costs multiplied by actual all-lives exposure. The claim costs vary by gender, attained age, policy duration, benefit period, elimination period, payment type, level of home care coverage, inflation type, and coverage type (comprehensive/facility only). Policy design, claims adjudication, and degree of underwriting were considered in developing the claim costs.
- Adjusted expected incurred claims [E] are calculated by applying each applicable adjustment from Exhibit A-3a to the 2014 *Guidelines* expected incurred claims [D].
- A:E ratios are calculated as actual incurred claims to the 2014 *Guidelines* expected incurred claims [F] and adjusted expected incurred claims [G]. The adjusted A:E [G] provides an indication of fit. This fit will not be perfect (i.e., ratio deviates from 1.0) because the main goal is to develop an assumption that generalizes well to new data by balancing assumption complexity and fit on the historical experience.

Improvement

For projected mortality improvement, the G2 improvement scale from the 2012IAM mortality table was used. This assumption was also used for projected morbidity improvement. The G2 improvement scale varies by attained age and is applied beginning in the first projection year and continues for 10 projection years.

Rate Increase Dependent Assumptions

At the time of a rate increase, insureds have options to elect a contingent benefit upon lapse (CBUL) or reduced benefit options (RBO). Adverse selection is assumed relative to CBUL and RBO elections. These insured behavior assumptions are provided below, and were developed primarily based on actuarial judgment with high-level consideration for the experience of other carriers in the LTC industry, to the extent available.

Contingent Benefit Upon Lapse Election Rates

A CBUL election rate is determined as a function of the magnitude of the rate increase and applied on a seriatim basis. The CBUL election rate is determined as a factor of 0.08 multiplied by the rate increase percentage for rate increases greater than 15%. The rate increase percentage is rounded to the nearest 10% prior to applying this factor to remove implied specificity. For rate increases less than or equal to 15%, no CBUL is assumed.

No CBUL elections are assumed for insureds with a limited premium payment option.

Reduced Benefit Options

The RBO election rate is based on the CBUL election rate. The RBO election rate is assumed to be two and a half times the CBUL election rate (i.e., 2.5 multiplied by CBUL election) for rate increases greater than 15%. Because the RBO election rate is based on the CBUL election rate; no RBO is assumed for increases less than or equal to 15% or for insureds with a limited premium payment option.

Based on the RBO election function, the reduction to premium and claims can then be determined as follows:

Reduction to premium and claims due to the election of RBO
= $1 - (\text{Average premium level after the rate increase with RBO election} / \text{Premium level after the full rate increase without any RBO election})$, where

Average premium level after the rate increase with RBO election
= weighted average premium level of the assumed percentage of insureds electing RBO with the percentage assumed to accept the full rate increase

Adverse Selection

The adverse selection assumption is a function of the CBUL and RBO election rates, such that the relative increase to morbidity due to adverse selection varies by the rate increase's magnitude. The percentage increase in morbidity due to adverse selection was developed from the following formula and actuarial judgment. We assume that at the time of the rate increase, insureds that elect a CBUL will be selective in that their relative morbidity is 25% lower than that of the remaining pool. Similarly, we assume that at the time of the rate increase, insureds that elect an RBO will be selective in that their relative morbidity is 12.5% lower than that of the remaining pool.

Appendix A
Development and Justification of Current Assumptions

$PoolMorb = AdvSelMorb \times (1 - CBUL - RBO) + [(1 - 25\%) \times AdvSelMorb] \times CBUL + [(1 - 12.5\%) \times AdvSelMorb] \times RBO$, where

PoolMorb = morbidity of the pool before the rate increase = 1.0
AdvSelMorb = adverse morbidity of the remaining pool after the rate increase due to selective lapses
CBUL = percentage of policies that elect CBUL
RBO = percentage of policies that elect RBO

Solving the above for the adverse selection component results in the following formula:

$$\text{Adverse Selection} = 1 / (1 - 25\% \times CBUL - 12.5\% \times RBO)$$

Predictive Analytics

In developing the mortality and morbidity adjustment factors, predictive analytics was employed in the form of a penalized generalized linear model (GLM).

A penalized GLM is similar to a traditional GLM. The only difference is that it adds an additional constraint that penalizes the size of the model's coefficients in order to control overfitting the model to the historical data. This penalty placed on the coefficients can be seen as a credibility lever, which controls how much weight is given to the company's actual experience. A high penalty would give no weight to the data, leaving the benchmark assumption (i.e., the 2012IAM for mortality or the 2014 *Guidelines* for morbidity) unadjusted. No penalty would give full weight to the company's actual data potentially making large adjustments to the benchmark, which could be overfitting the actual experience. When using a penalized GLM it is important to choose a penalty that gives the right amount of weight to the actual data to avoid underfitting or overfitting the experience.

A standard approach for choosing such a penalty is to use a k-fold cross-validation to test a series of penalty values. A k-fold cross-validation splits the data into k subsets and iteratively trains and tests the model independently on each subset of the data. This process gives an estimation of how well a model will generalize to new data that was not used to develop the assumption. Through the k-fold cross-validation we evaluated the impact the penalty had on the model's generalizability by testing a range of 100 penalties. We selected the penalty that minimized the k-fold cross-validation prediction error. Using this approach, we were able to determine the amount of weight to give actual experience versus the benchmark assumption through a statistically robust and automated process.

Credibility

Traditional techniques were employed to develop the voluntarily lapse assumption, which considers actual historical experience, its associated credibility, and actuarial judgment. The credibility percentage was determined as $(\text{Number of Events} / \text{Credibility Threshold})^{1/2}$, where an event is defined as an actual voluntary lapse. A credibility standard of a 90% confidence interval for the number of events with an error of plus or minus 7.5% was chosen. Based on these parameters, 481 events is the criterion for full credibility.

**Exhibit A-1a
Mortality Hazard Rate Adjustment Factors**

Attained Age	Factor
<55	0.99
55	0.97
56	0.94
57	0.91
58	0.88
59	0.85
60	0.82
61	0.79
62	0.77
63	0.74
64	0.72
65	0.71
66	0.71
67	0.73
68	0.74
69	0.76
70	0.78
71	0.80
72	0.82
73	0.83
74	0.85
75	0.87
76	0.89
77	0.90
78	0.90
79	0.90
80	0.91
81	0.92
82	0.94
83	0.95
84	0.96
85	0.96
86	0.97
87	0.98
88	0.99
89	0.99
90	1.00
91	1.00
92	1.00
93	1.00
94	1.00
95	1.00
96	1.00
97	1.00
98	1.00
99	1.00
100+	1.00

Gender	Factor
Male	0.98
Female	0.96

Partner Status	Factor
Single	0.99
Partnered	0.95

Underwriting Class	Factor
Preferred	0.94
Standard	0.99
Substandard	1.01

Duration	Factor
1	0.82
2	0.71
3	0.64
4	0.59
5	0.56
6	0.64
7	0.72
8	0.77
9	0.79
10	0.81
11	0.83
12	0.85
13	0.87
14	0.89
15	0.91
16	0.93
17	0.95
18	0.97
19	0.98
20+	0.98

Exhibit A-1b
Actual-to-Expected (A:E) Mortality Experience through December 31, 2016
All Rate Series Combined

Policy or Policyowner Characteristic	Policy Year Exposure [A]	Actual		Expected Mortality Probability		Actual-to-Expected Mortality	
		Deaths [B]	Probability [C]	2012IAM [D]	Adjusted [E]	2012IAM [F] = [C] / [D]	Adjusted [G] = [C] / [E]
Partner Status							
Partnered	633,561	1,725	0.3%	0.7%	0.4%	0.41	0.77
Single	227,515	974	0.4%	0.8%	0.5%	0.53	0.91
Gender							
Female	481,531	1,253	0.3%	0.6%	0.3%	0.44	0.79
Male	379,545	1,446	0.4%	0.8%	0.4%	0.46	0.85
Policy Duration							
1-3	283,626	351	0.1%	0.4%	0.2%	0.28	0.52
4-6	226,364	530	0.2%	0.6%	0.3%	0.40	0.93
7-9	171,663	650	0.4%	0.8%	0.4%	0.50	0.91
10-12	125,828	668	0.5%	1.0%	0.6%	0.52	0.86
13+	53,595	500	0.9%	1.5%	1.0%	0.61	0.90
Attained Age							
<65	569,972	776	0.1%	0.4%	0.2%	0.36	0.68
65-69	165,496	562	0.3%	0.9%	0.4%	0.38	0.79
70-74	83,040	591	0.7%	1.3%	0.7%	0.53	0.95
75-79	30,756	399	1.3%	2.2%	1.4%	0.59	0.93
80-84	9,331	229	2.4%	3.9%	2.7%	0.63	0.91
85+	2,481	142	5.6%	7.7%	5.8%	0.73	0.97
Underwriting							
Preferred	536,646	1,597	0.3%	0.7%	0.4%	0.42	0.77
Standard	275,333	848	0.3%	0.7%	0.4%	0.45	0.81
Substandard	49,096	254	0.5%	0.7%	0.4%	0.76	1.34
Rate Series							
200 Series	316,341	1,493	0.5%	0.9%	0.5%	0.54	0.94
300 Series	229,396	643	0.3%	0.6%	0.4%	0.43	0.79
400 Series	152,091	340	0.2%	0.6%	0.3%	0.38	0.74
500+ Series	163,247	223	0.1%	0.5%	0.3%	0.26	0.52
Total	861,076	2,699	0.3%	0.7%	0.4%	0.45	0.82

Exhibit A-2a(i)
Derived Lifetime-Pay Voluntary Lapse Experience through December 31, 2016
Single Policies for All Rate Series Combined

Duration	Exposure	Composite Termination Probability	Expected Mortality Probability	Derived Lapse Probability	Credibility Percent	Smoothed Lapse Probability
1	23,407	4.2%	0.3%	4.0%	100%	4.00%
2	21,264	5.8%	0.3%	5.5%	100%	5.50%
3	19,703	3.8%	0.3%	3.6%	100%	3.50%
4	18,369	3.3%	0.3%	3.0%	100%	3.00%
5	17,007	2.8%	0.3%	2.5%	93%	2.50%
6	15,568	2.3%	0.4%	1.9%	79%	2.00%
7	14,443	2.2%	0.5%	1.7%	73%	1.75%
8	13,494	1.9%	0.5%	1.4%	62%	1.25%
9	12,543	1.9%	0.6%	1.3%	59%	0.90%
10	11,331	1.7%	0.7%	0.9%	47%	0.90%
11	10,159	1.4%	0.8%	0.6%	40%	0.90%
12	8,603	1.5%	0.9%	0.6%	34%	0.90%
13	6,007	2.2%	1.1%	1.1%	32%	0.90%
14	3,887	2.1%	1.4%	0.7%	23%	0.90%
15	2,128	2.1%	1.6%	0.5%	14%	0.90%
16	834	2.1%	2.0%	0.1%	10%	0.90%
17	65	0.0%	2.4%	-2.4%	0%	0.90%
1-3	64,374	4.6%	0.3%	4.4%	100%	4.3%
4-6	50,944	2.8%	0.3%	2.5%	100%	2.5%
7+	83,493	1.9%	0.8%	1.1%	100%	1.1%
8+	69,050	1.8%	0.8%	1.0%	100%	1.0%
9+	55,556	1.8%	0.9%	0.9%	100%	0.9%
All	198,811	3.0%	0.5%	2.5%	100%	2.5%

Exhibit A-2a(ii)
Derived Lifetime-Pay Voluntary Lapse Experience through December 31, 2016
Partnered Policies for All Rate Series Combined

Duration	Exposure	Composite Termination Probability	Expected Mortality Probability	Derived Lapse Probability	Credibility Percent	Smoothed Lapse Probability
1	63,015	1.7%	0.3%	1.5%	100%	1.50%
2	58,226	2.8%	0.2%	2.6%	100%	2.50%
3	54,233	2.2%	0.2%	1.9%	100%	2.00%
4	50,328	1.7%	0.2%	1.4%	100%	1.50%
5	45,537	1.4%	0.2%	1.2%	100%	1.20%
6	39,531	1.2%	0.3%	0.9%	86%	0.90%
7	35,798	1.1%	0.4%	0.7%	77%	0.70%
8	32,859	1.0%	0.4%	0.6%	68%	0.60%
9	30,266	1.0%	0.5%	0.5%	58%	0.50%
10	27,255	0.9%	0.5%	0.4%	53%	0.50%
11	24,529	1.1%	0.6%	0.5%	50%	0.50%
12	20,834	1.0%	0.7%	0.3%	42%	0.50%
13	15,039	1.0%	0.8%	0.1%	33%	0.50%
14	10,352	1.4%	1.0%	0.5%	33%	0.50%
15	5,487	1.4%	1.2%	0.1%	18%	0.50%
16	2,042	1.1%	1.5%	-0.5%	9%	0.50%
17	138	0.7%	1.9%	-1.2%	0%	0.50%
1-3	175,475	2.2%	0.2%	2.0%	100%	2.0%
4-6	135,396	1.4%	0.3%	1.2%	100%	1.2%
7+	204,599	1.0%	0.6%	0.5%	100%	0.6%
8+	168,800	1.0%	0.6%	0.4%	100%	0.5%
9+	135,942	1.0%	0.7%	0.4%	100%	0.5%
All	515,469	1.6%	0.4%	1.2%	100%	1.2%

Exhibit A-2b(i)
Derived 10-Pay Voluntary Lapse Experience through December 31, 2016
Single Policies for All Rate Series Combined

Duration	Exposure	Composite Termination Probability	Expected Mortality Probability	Derived Lapse Probability	Credibility Percent	Ratio to Lifetime-Pay Lapse^[1]	Smoothed Ratio to Lifetime-Pay^[2]	Smoothed Lapse Probability
1	1,950	1.8%	0.2%	1.6%	27%	0.41	0.50	2.00%
2	1,884	3.9%	0.2%	3.7%	38%	0.68	0.50	2.75%
3	1,820	2.4%	0.2%	2.3%	30%	0.64	0.50	1.75%
4	1,793	1.7%	0.2%	1.5%	24%	0.51	0.50	1.50%
5	1,733	1.6%	0.2%	1.4%	24%	0.57	0.50	1.25%
6	1,587	0.8%	0.2%	0.6%	14%	0.31	0.50	1.00%
7	1,499	1.1%	0.3%	0.8%	16%	0.45	0.50	0.88%
8	1,442	0.4%	0.3%	0.1%	9%	0.07	0.50	0.63%
9	1,371	0.4%	0.4%	0.1%	8%	0.06	0.00	0.00%
10	1,251	0.2%	0.4%	-0.2%	0%	-0.17	0.00	0.00%
11	1,103	0.2%	0.5%	-0.3%	0%	-0.46	0.00	0.00%
12	902	0.2%	0.5%	-0.3%	0%	-0.51	0.00	0.00%
13	502	0.4%	0.6%	-0.2%	0%	-0.17	0.00	0.00%
14	282	0.7%	0.7%	0.0%	0%	-0.01	0.00	0.00%
15	143	0.7%	0.9%	-0.2%	0%	-0.42	0.00	0.00%
16	52	0.0%	1.0%	-1.0%	0%	-7.48	0.00	0.00%
17	3	0.0%	0.8%	-0.8%	0%	0.33	0.00	0.00%
All	19,318	1.4%	0.3%	1.1%	69%	0.43	0.43	1.1%

[1] Values in this column are calculated as the ratio of the 10-pay derived lapse probability to the corresponding lifetime-pay derived lapse probability from Exhibit A-2a (e.g., Duration 3 ratio = 2.3% / 3.6%).

[2] Values in this column are calculated as the ratio of the 10-pay smoothed lapse probability to the corresponding lifetime-pay smoothed lapse probability from Exhibit A-2a (e.g., Duration 3 ratio = 1.75% / 3.50%).

Exhibit A-2b(ii)
Derived 10-Pay Voluntary Lapse Experience through December 31, 2016
Partnered Policies for All Rate Series Combined

Duration	Exposure	Composite Termination Probability	Expected Mortality Probability	Derived Lapse Probability	Credibility Percent	Ratio to Lifetime-Pay Lapse^[1]	Smoothed Ratio to Lifetime-Pay^[2]	Smoothed Lapse Probability
1	8,646	0.7%	0.2%	0.5%	35%	0.35	0.50	0.75%
2	8,528	1.4%	0.2%	1.2%	48%	0.46	0.50	1.25%
3	8,431	1.3%	0.2%	1.1%	46%	0.59	0.50	1.00%
4	8,325	1.1%	0.2%	0.9%	41%	0.65	0.50	0.75%
5	7,960	1.2%	0.2%	1.0%	42%	0.89	0.50	0.60%
6	6,899	0.5%	0.2%	0.3%	25%	0.39	0.50	0.45%
7	6,371	0.9%	0.2%	0.6%	28%	0.90	0.50	0.35%
8	6,009	0.4%	0.3%	0.2%	14%	0.27	0.50	0.30%
9	5,560	0.4%	0.3%	0.1%	11%	0.18	0.00	0.00%
10	4,936	0.5%	0.3%	0.2%	19%	0.44	0.00	0.00%
11	4,360	0.4%	0.4%	0.0%	14%	0.02	0.00	0.00%
12	3,477	0.4%	0.4%	0.0%	6%	-0.09	0.00	0.00%
13	1,986	0.4%	0.5%	-0.2%	0%	-1.09	0.00	0.00%
14	1,158	0.6%	0.6%	0.0%	0%	0.00	0.00	0.00%
15	599	0.7%	0.7%	0.0%	0%	-0.20	0.00	0.00%
16	216	0.5%	0.8%	-0.3%	0%	0.72	0.00	0.00%
17	11	0.0%	1.0%	-1.0%	0%	0.83	0.00	0.00%
All	83,473	0.8%	0.2%	0.6%	100%	0.50	0.43	0.5%

[1] Values in this column are calculated as the ratio of the 10-pay derived lapse probability to the corresponding lifetime-pay derived lapse probability from Exhibit A-2a (e.g., Duration 3 ratio = 1.1% / 1.9%).

[2] Values in this column are calculated as the ratio of the 10-pay smoothed lapse probability to the corresponding lifetime-pay smoothed lapse probability from Exhibit A-2a (e.g., Duration 3 ratio = 1.00% / 2.00%).

**Exhibit A-3a
Morbidity Adjustment Factors**

Duration	Rate Series			
	200 Series	300 Series	400 Series	500+ Series
1	0.99	1.05	1.02	1.00
2	1.01	1.12	1.05	0.99
3	1.02	1.11	1.05	0.97
4	1.08	1.03	0.99	0.96
5	1.05	0.96	0.95	0.96
6	1.10	0.99	0.92	0.98
7	1.05	1.01	0.95	0.98
8	1.10	1.03	0.94	0.98
9	1.09	1.02	0.93	0.97
10	1.14	1.02	0.90	0.99
11	1.08	0.96	0.91	1.00
12	1.05	0.92	0.93	1.00
13	0.99	0.90	0.97	1.00
14	0.99	0.95	0.99	1.00
15	0.96	0.98	1.00	1.00
16	0.97	1.00	1.00	1.00
17	0.97	1.00	1.00	1.00
18	1.00	1.00	1.00	1.00
19	1.00	1.00	1.00	1.00
20+	1.00	1.00	1.00	1.00

Gender	Factor
Male	1.04
Female	0.91

Underwriting Class	Factor
Preferred	0.90
Non-Preferred	1.05

Attained Age	Rate Series				Benefit Period		Benefit Type	
	200 Series	300 Series	400 Series	500+ Series	Lifetime	Non-Lifetime	Indemnity	Reimbursement
<55	1.02	1.00	1.00	1.00	1.02	1.00	1.03	0.99
55	1.02	1.00	1.00	1.00	1.02	1.00	1.03	0.99
56	1.02	1.00	1.00	1.00	1.02	1.00	1.03	0.99
57	1.02	1.00	0.97	0.99	0.99	0.99	1.01	0.97
58	1.00	0.98	0.94	0.99	0.94	0.97	0.99	0.93
59	0.98	0.98	0.93	0.98	0.92	0.95	0.96	0.91
60	0.93	0.97	0.91	0.98	0.88	0.92	0.91	0.89
61	0.93	0.96	0.88	0.98	0.87	0.90	0.89	0.88
62	0.92	0.95	0.88	0.99	0.86	0.89	0.86	0.89
63	0.93	0.95	0.90	1.00	0.89	0.89	0.85	0.93
64	0.96	0.93	0.90	1.00	0.91	0.88	0.86	0.94
65	1.00	0.91	0.91	1.01	0.92	0.91	0.89	0.94
66	0.99	0.91	0.93	1.00	0.93	0.91	0.92	0.92
67	1.00	0.92	0.96	1.00	0.96	0.92	0.96	0.92
68	1.01	0.96	0.96	0.99	0.99	0.93	1.03	0.90
69	0.99	0.98	0.95	0.99	0.97	0.95	1.05	0.87
70	0.97	1.01	0.97	0.98	0.99	0.93	1.04	0.89
71	0.97	1.02	0.96	0.98	1.02	0.93	1.05	0.90
72	1.00	1.05	0.95	0.98	1.06	0.92	1.09	0.90
73	0.99	1.03	0.97	0.99	1.06	0.91	1.07	0.91
74	1.01	1.03	1.00	0.99	1.13	0.91	1.07	0.96
75	1.05	1.01	1.00	0.99	1.15	0.92	1.07	0.98
76	1.07	0.99	1.01	0.99	1.13	0.93	1.06	1.00
77	1.06	0.96	1.02	1.00	1.10	0.95	1.03	1.01
78	1.10	0.96	1.00	1.00	1.10	0.97	1.02	1.03
79	1.10	0.96	0.99	0.99	1.05	0.98	1.02	1.02
80	1.09	0.97	0.98	0.99	1.03	1.00	1.03	1.00
81	1.10	0.99	0.97	0.99	1.04	1.01	1.04	1.01
82	1.10	1.00	0.97	0.99	1.03	1.03	1.05	1.01
83	1.07	1.01	0.97	0.99	1.02	1.02	1.05	1.00
84	1.06	1.02	0.97	0.99	1.02	1.02	1.03	1.01
85	1.04	1.02	0.98	0.99	1.01	1.01	1.02	1.00
86	1.02	1.01	0.98	0.99	1.00	1.00	1.01	1.00
87	1.00	1.01	0.99	0.99	0.99	1.00	1.00	0.99
88	0.99	1.01	0.99	1.00	0.99	1.00	0.99	1.00
89	0.98	1.00	1.00	1.00	0.98	1.00	0.99	0.99
90	0.99	1.00	1.01	1.00	0.98	1.02	0.99	1.00
91	0.99	1.00	1.01	1.00	0.98	1.02	0.99	1.00
92	1.00	0.99	1.01	1.00	0.98	1.02	0.99	1.01
93	1.00	1.00	1.01	1.00	0.98	1.02	0.99	1.01
94	1.01	1.00	1.01	1.00	0.99	1.02	1.00	1.01
95	1.01	1.00	1.00	1.00	0.99	1.02	1.00	1.01
96	1.01	1.00	1.00	1.00	1.00	1.01	1.00	1.01
97	1.01	1.00	1.00	1.00	1.00	1.01	1.00	1.01
98	1.01	1.00	1.00	1.00	1.00	1.01	1.00	1.01
99	1.00	1.00	1.00	1.00	1.00	1.01	1.00	1.01
100+	1.00	1.00	1.00	1.00	1.00	1.01	1.00	1.00

Exhibit A-3b
Actual-to-Expected (A:E) Morbidity Experience through December 31, 2016 with Claim Runout
All Rate Series Combined

Policy or Policyowner Characteristic	Exposure [A]	Actual Incurred Claims		Expected Incurred Claims		Actual-to-Expected Incurred Claims	
		Count [B]	Dollars [C]	2014 Guidelines [D]	Adjusted [E]	2014 Guidelines [F] = [C] / [D]	Adjusted [G] = [C] / [E]
Partner Status							
Partnered	633,635	876	124,048,594	149,444,034	120,544,568	0.83	1.03
Single	227,993	826	121,211,932	150,297,766	124,715,707	0.81	0.97
Gender							
Female	482,025	1,023	154,581,170	199,983,051	159,654,075	0.77	0.97
Male	379,604	679	90,679,357	99,758,749	85,606,200	0.91	1.06
Policy Duration							
1-3	283,773	161	19,695,627	17,501,435	17,393,115	1.13	1.13
4-6	226,507	296	38,343,898	39,734,217	38,289,115	0.97	1.00
7-9	171,790	424	53,999,057	67,107,620	55,942,454	0.80	0.97
10-12	125,922	466	77,447,114	90,364,783	76,093,914	0.86	1.02
13+	53,636	355	55,774,830	85,033,744	57,541,678	0.66	0.97
Attained Age							
<64	569,996	358	49,741,046	61,277,039	49,275,898	0.81	1.01
65-69	165,548	275	47,126,413	60,891,816	46,645,563	0.77	1.01
70-74	83,119	315	51,145,259	66,942,436	54,400,783	0.76	0.94
75-79	30,888	350	53,617,580	56,798,760	50,974,964	0.94	1.05
80-84	9,475	261	30,528,317	35,272,061	30,218,075	0.87	1.01
85+	2,603	143	13,101,912	18,559,687	13,744,992	0.71	0.95
Underwriting							
Preferred	536,926	996	143,125,012	188,629,862	149,574,881	0.76	0.96
Non-Preferred	324,703	706	102,135,515	111,111,938	95,685,395	0.92	1.07
Benefit Type							
Indemnity	261,867	486	89,470,260	93,878,830	76,889,898	0.95	1.16
Reimbursement	599,762	1,216	155,790,266	205,862,969	168,370,377	0.76	0.93
Rate Series							
200 Series	316,802	1,023	144,886,364	159,218,142	136,496,321	0.91	1.06
300 Series	229,457	375	62,282,938	81,754,214	64,361,822	0.76	0.97
400 Series	152,111	204	24,106,166	39,255,569	29,031,345	0.61	0.83
500+ Series	163,258	100	13,985,059	19,513,874	15,370,786	0.72	0.91
Total	861,628	1,702	245,260,527	299,741,799	245,260,275	0.82	1.00

Appendix B
Massachusetts Mutual Life Insurance Company
Comparison of Current and 513 Series Pricing Assumptions

Morbidity	
Current Assumptions	Claim costs are developed using the 2014 Milliman Long-Term Care Guidelines (Guidelines) with adjustments for underwriting selection and an all-lives exposure basis. The claim costs were further adjusted based on historical claim experience by rate series, attained age, policy duration, benefit period, benefit payment type, gender, and underwriting class, to the extent credible. An exhibit containing the adjustment factors is provided in Appendix A to the actuarial memorandum.
513 Pricing Assumptions	The morbidity assumption was derived using industry experience as reported in the Intercompany Study 1984-2004 published by the Society of Actuaries Long Term Care Experience Committee (2004 Study) and adjusted, to the extent credible, by the aggregate experience of the company's reinsurer.

Mortality	
Current Assumptions	Mortality Rates reflect the 2012 Individual Annuity Mortality Basic gender-distinct table (2012IAM). The mortality rates were adjusted based on historical experience by attained age, policy duration, gender, underwriting class, and partner status, to the extent credible. An exhibit containing the adjustment factors is provided in Appendix A to the actuarial memorandum.
513 Pricing Assumptions	A2000 Mortality table is used for active lives along with adjustments by attained age and gender. The disabled mortality assumption is derived using industry experience as reported in the 2004 Study.

Appendix B
Massachusetts Mutual Life Insurance Company
Comparison of Current and 513 Series Pricing Assumptions

Lapse Rates																																																																																																																																																									
Current Assumptions	Voluntary lapse rates (excludes benefit expiry) vary by policy duration and partner status.																																																																																																																																																								
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For the ten-pay option, a reduction of 50% of the above lapse rates is assumed for durations one through eight, and 0% lapse thereafter. For the twenty-pay option, a reduction of 25% of the above lapse rates is assumed for durations one through fifteen, and 0% lapse thereafter. For the paid up at age 65 option, a reduction of 25% of these lapse rates was assumed until age 60, and 0% lapse thereafter. For the non-level payment option, a reduction of 25% of the above lapse rates is assumed for all durations.																																																																																																																																																									
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Appendix B
Massachusetts Mutual Life Insurance Company
Comparison of Current and 513 Series Pricing Assumptions

Benefit Expiry Rates	
Current Assumptions	Benefit expiry rates reflect assumed policy termination due to exhaustion of benefits on limited benefit period policies. The rates are based on the 2014 Guidelines and vary by gender, benefit period, and attained age. A table containing the benefit expiry rates is provided in Section 6 of the actuarial memorandum.
513 Pricing Assumptions	An explicit benefit expiry assumption was not included in the original pricing memoranda.

Interest Rate																			
Current Assumptions	<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Series</th> <th style="text-align: center;">Maximum Valuation at Issue^[1]</th> <th style="text-align: center;">Current^[2]</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">200</td> <td style="text-align: center;">4.5%</td> <td style="text-align: center;">5.0%</td> </tr> <tr> <td style="text-align: center;">300</td> <td style="text-align: center;">4.5%</td> <td style="text-align: center;">5.0%</td> </tr> <tr> <td style="text-align: center;">400</td> <td style="text-align: center;">4.1%</td> <td style="text-align: center;">5.0%</td> </tr> <tr> <td style="text-align: center;">500</td> <td style="text-align: center;">4.0%</td> <td style="text-align: center;">4.0%</td> </tr> <tr> <td style="text-align: center;">511</td> <td style="text-align: center;">3.7%</td> <td style="text-align: center;">3.7%</td> </tr> </tbody> </table> <p style="font-size: small; margin-top: 5px;">[1] Average interest rates by series are shown. Interest rate varies by policy from 3.5% to 4.5% and is based on policy issue date. [2] Basis that is consistent with original pricing, which is earnings rate for pre-500 and maximum valuation rate for 500+.</p>	Series	Maximum Valuation at Issue ^[1]	Current ^[2]	200	4.5%	5.0%	300	4.5%	5.0%	400	4.1%	5.0%	500	4.0%	4.0%	511	3.7%	3.7%
Series	Maximum Valuation at Issue ^[1]	Current ^[2]																	
200	4.5%	5.0%																	
300	4.5%	5.0%																	
400	4.1%	5.0%																	
500	4.0%	4.0%																	
511	3.7%	3.7%																	
513 Pricing Assumptions	3.5% maximum valuation rate																		

Improvement	
Current Assumptions	Annual improvement in the mortality and morbidity assumptions is assumed for 10 future years. Annual improvement factors vary by attained age based on the G2 improvement scale from the 2012IAM table.
513 Pricing Assumptions	An annual improvement assumption was not included in pricing.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Supplement to the Actuarial Memorandum

July 30, 2018

<u>Product</u>	<u>Number</u>
200 Series	
Tax-Qualified Comprehensive Long-Term Care Policy Form	MM-200-P-PA et al.
Tax-Qualified Nursing Facility Only Long-Term Care Policy Form	MM-201-P-PA et al.
Tax-Qualified Franchise Comprehensive Long-Term Care Policy Form	MM-202-P-PA et al.
Tax-Qualified Franchise Nursing Facility Only Long-Term Care Policy Form	MM-203-P-PA et al.
Tax-Qualified Comprehensive Long-Term Care Policy Form	MM-200-P-1-PA et al.
Tax-Qualified Nursing Facility Only Long-Term Care Policy Form	MM-201-P-1-PA et al.
Tax-Qualified Franchise Comprehensive Long-Term Care Policy Form	MM-202-P-1-PA et al.
Tax-Qualified Franchise Nursing Facility Only Long-Term Care Policy Form	MM-203-P-1-PA et al.
400 Series	
Tax-Qualified Comprehensive Long-Term Care Policy Form	MM-400-P-PA et al.
Tax-Qualified Nursing Facility Only Long-Term Care Policy Form	MM-401-P-PA et al.
Tax-Qualified Franchise-Association Discount Comprehensive Long-Term Care Policy Form	MM-402-P-PA et al.
Tax-Qualified Franchise-Association Discount Nursing Facility Only Long-Term Care Policy Form	MM-403-P-PA et al.
Tax-Qualified Franchise-Employer Discount Comprehensive Long-Term Care Policy Form	MM-404-P-PA et al.
Tax-Qualified Franchise-Employer Discount Nursing Facility Only Long-Term Care Policy Form	MM-405-P-PA et al.
500 Series	
Tax-Qualified Comprehensive Long-Term Care Policy Form	MM500-P-PA et al.
Tax-Qualified Franchise Comprehensive Long-Term Care Policy Form	MM502-P-PA et al.
511 Series	
Tax-Qualified Comprehensive Long-Term Care Policy Form	MM500-P-1-PA et al.
Tax-Qualified Franchise Comprehensive Long-Term Care Policy Form	MM502-P-1-PA et al.

1. Purpose of Filing

This supplement has been prepared for the purpose of demonstrating that the requested rate increase complies with Chapter 18 Section 3803(c) and Reg. 89.83 of the Insurance Regulations for the state of Pennsylvania. It may not be appropriate for other purposes.

The experience provided in this supplement reflects the pooled experience of the policy forms listed above as well as the nationwide experience across the five rate series. Section 15 of the enclosed actuarial memorandum provides a description as to the appropriateness of pooling the experience of these policy forms.

2. Demonstration of Compliance with Chapter 18 Section 3803

(c): We believe that we comply with this subsection of the regulation by submitting these rates before they are being used.

3. Demonstration of Compliance with Reg. 89.83

89.83 (a): This subsection requires no action.

89.83 (b): This subsection is not applicable since this filing is not for rates for a new policy form.

89.83 (c): Revision of Current Rates

(1): For policies issued prior to September 16, 2002, the effective date of rate stability in Pennsylvania, the minimum loss ratio requirement is 60%, as specified in Reg. 89a.117.(b). For policies issued on or after September 16, 2002, the loss ratio requirements are specified in Reg. 89a.118.(c)(2), (i.e., the 58%/85% test). Demonstration of satisfaction of these requirements is discussed in Section 15 of the enclosed actuarial memorandum.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Supplement to the Actuarial Memorandum

July 30, 2018

As of December 31, 2016, 4,205 of the 5,384 policies that are in force and subject to the requested rate increase in Pennsylvania were issued on or after September 16, 2002 (approximately 78%). However, because the company manages this block of business as a whole, this rate increase filing complies with both sets of requirements for all of the policies, regardless of issue date.

(2): Section 3 of the actuarial memorandum provides a description of benefits. Copies of the affected policy forms may be provided upon request.

(2)(i): The primary reason why these forms are in need of a premium rate increase is due to emerging experience running more adverse than expected in pricing.

The company is requesting a premium rate increase to achieve a rate level consistent with that on its currently marketed 513 Series new business product as described in Section 2 of the enclosed actuarial memorandum. The resulting rate increase varies by rate series and all available options and riders. This rate increase is then capped on a seriatim basis such that no insured will receive a rate increase in excess of 100%. The table in Section 2 provides the distribution, range, and average requested rate increases for each series based on the nationwide distribution of business. The enclosed cover letter provides similar information based on a Pennsylvania-specific distribution.

The current rate schedules along with the proposed rate schedules are enclosed with this filing. Please note that the actual rates implemented may vary slightly from those shown due to rounding algorithms.

Attachment 1 to this supplement provides actual and projected nationwide experience using current assumptions, as described in Section 6 of the actuarial memorandum. Included are calendar year earned premiums, incurred claims, annual loss ratios, end of year lives, and cumulative loss ratios with interest. Attachment 1 is identical to Exhibit I of the actuarial memorandum.

Attachment 2 to this supplement provides nationwide experience showing written premium, paid claims, and cumulative loss ratios. Values in Attachments 1 and 2 are shown both before and after the requested rate increase. The interest rate used in Attachments 1 and 2 to accumulate and discount values is the maximum valuation interest rate for contract reserves applicable for the year of issue (which ranges from 3.5% to 4.5%, and averages to 4.1%).

Attachments 3 and 4 to this supplement provide similar information as Attachments 1 and 2, respectively, for Pennsylvania-specific experience. Please note that Pennsylvania-specific experience is not considered fully credible, but is being provided as required.

(2)(ii)(A): No prior rate increases have been implemented on these products.

(2)(ii)(B): Expenses have not been reflected in the projections for this filing. Attachment 5 provides a description of the expense assumptions, including commission scales for the products in this filing. The expense and commission assumptions are consistent with pricing assumptions.

(2)(ii)(C)(I): Premiums earned and written since inception for nationwide experience can be found in Attachments 1 and 2, respectively. Premiums earned and written since inception for Pennsylvania-specific experience can be found in Attachments 3 and 4, respectively. Attachment 6 to this supplement provides reserve balances and the calculation basis for both nationwide and Pennsylvania-specific experience. Please note that Pennsylvania-specific experience is not considered fully credible, but is being provided as required.

(2)(ii)(C)(II): Attachment 6 to this supplement provides a breakdown of historical incurred claims and active life reserve balance, including a description of the calculation basis, for both nationwide and Pennsylvania-specific experience. Please note that Pennsylvania-specific experience is not considered fully credible, but is being provided as required.

Attachment 7 to this supplement provides actual and projected experience on a durational basis using current assumptions. Included are policy year earned premiums, incurred claims, durational loss ratios, end of year lives, and cumulative loss ratios with interest. Values in Attachment 7 are shown both before and after the requested rate increase. The number of durations shown was chosen to capture the majority of the durations

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Address: 1295 State Street, Springfield, MA 01111

Supplement to the Actuarial Memorandum

July 30, 2018

underlying Attachment 1. Similar to Attachments 1 through 4, the values used to calculate the cumulative loss ratios are accumulated and discounted at the maximum valuation interest rate.

Attachment 8 to this supplement provides similar information to Attachment 7 for Pennsylvania-specific experience. Please note that Pennsylvania-specific experience is not considered fully credible, but is being provided as required.

(2)(ii)(D): We believe that we have provided information sufficient to support the rate increase requested in this filing.

(2)(iii): We understand that data used in this rate increase filing is in agreement with those used in the annual statement filed with the department.

89.83 (d): We believe the proposed rate tables provided with this filing comply with this subsection.

Attachment 1-a
Massachusetts Mutual Life Insurance Company
Earned Premium and Incurred Claim Experience and Projections by Calendar Year
Nationwide Experience Before Requested Rate Increase
All Rate Series Combined

	Calendar Year	Actual or Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
Historical Experience	2000	613,240	0	0%	1,775	0%
	2001	8,395,491	64,652	1%	7,642	1%
	2002	21,414,123	527,514	2%	15,522	2%
	2003	38,423,209	1,663,767	4%	24,571	3%
	2004	58,600,776	1,499,223	3%	34,074	3%
	2005	88,587,224	5,917,061	7%	45,088	4%
	2006	108,266,631	4,124,523	4%	50,082	4%
	2007	121,895,279	9,601,387	8%	54,405	5%
	2008	137,228,636	9,464,000	7%	58,834	6%
	2009	146,783,646	14,396,475	10%	61,275	6%
	2010	157,044,149	18,532,382	12%	64,748	7%
	2011	170,045,482	18,642,615	11%	70,309	8%
	2012	193,342,609	23,728,913	12%	77,353	8%
	2013	201,251,429	26,201,269	13%	79,455	9%
	2014	196,209,517	34,432,838	18%	78,588	10%
	2015	183,819,465	40,611,186	22%	77,807	11%
2016	174,917,980	38,574,940	22%	77,020	12%	
Projected Future Experience	2017	172,241,693	54,502,773	32%	75,896	13%
	2018	165,047,886	64,573,658	39%	74,783	14%
	2019	159,193,087	76,343,329	48%	73,661	16%
	2020	153,983,243	89,588,731	58%	72,510	17%
	2021	147,746,139	104,201,577	71%	71,315	19%
	2022	137,446,581	120,433,978	88%	70,064	22%
	2023	132,732,324	138,582,927	104%	68,748	24%
	2024	129,872,384	158,883,088	122%	67,363	26%
	2025	126,757,990	181,614,373	143%	65,906	29%
	2026	123,622,884	206,607,058	167%	64,374	32%
	2027	120,368,173	235,581,471	196%	62,755	35%
	2028	116,967,040	269,002,445	230%	61,041	39%
	2029	113,456,899	305,504,461	269%	59,228	43%
	2030	109,825,829	344,664,339	314%	57,316	47%
	2031	106,008,521	386,163,349	364%	55,304	51%
	2032	101,998,825	429,058,224	421%	53,195	56%
	2033	97,852,727	473,046,524	483%	50,994	61%
	2034	93,538,391	517,519,441	553%	48,705	66%
	2035	89,062,425	560,960,575	630%	46,338	71%
	2036	84,436,790	602,251,794	713%	43,902	76%
	2037	79,713,710	640,558,320	804%	41,411	82%
	2038	74,897,097	675,013,035	901%	38,880	87%
	2039	70,011,512	704,314,318	1,006%	36,326	93%
	2040	65,100,920	727,055,899	1,117%	33,766	99%
	2041	60,193,802	742,866,216	1,234%	31,221	104%
	2042	55,333,340	751,591,594	1,358%	28,709	109%
	2043	50,562,872	753,035,208	1,489%	26,251	114%
	2044	45,918,427	747,286,278	1,627%	23,864	119%
	2045	41,436,080	734,525,898	1,773%	21,566	124%
	2046	37,149,904	715,189,527	1,925%	19,373	128%
2047	33,089,359	689,963,515	2,085%	17,298	132%	
2048	29,278,136	659,215,478	2,252%	15,351	136%	
2049	25,733,967	624,218,429	2,426%	13,540	139%	
2050	22,468,351	585,694,514	2,607%	11,871	142%	
2051	19,487,186	545,003,489	2,797%	10,344	145%	
2052-2056	62,359,938	2,096,396,469	3,362%	33,661	154%	
2057-2061	25,527,035	1,172,994,097	4,595%	14,417	158%	
2062-2066	9,257,249	561,639,676	6,067%	5,517	160%	
2067-2071	3,137,808	234,707,490	7,480%	1,949	161%	
2072-2076	1,014,695	85,792,699	8,455%	651	161%	

With Interest Accum./Disc. To 12/31/2016

History	2,606,149,452	300,048,738	12%
Future	2,054,217,459	7,196,453,881	350%
Lifetime	4,660,366,911	7,496,502,619	161%

Attachment 1-b
Massachusetts Mutual Life Insurance Company
Earned Premium and Incurred Claim Experience and Projections by Calendar Year
Nationwide Experience After Requested Rate Increase
All Rate Series Combined

		Actual or Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
Calendar Year		A	B	C = B / A	D	E
		Earned Premium	Incurred Claims	Incurred Loss Ratio	End of Year Lives	Actual (Column C) with Max. Val. Interest
Historical Experience	2000	613,240	0	0%	1,775	0%
	2001	8,395,491	64,652	1%	7,642	1%
	2002	21,414,123	527,514	2%	15,522	2%
	2003	38,423,209	1,663,767	4%	24,571	3%
	2004	58,600,776	1,499,223	3%	34,074	3%
	2005	88,587,224	5,917,061	7%	45,088	4%
	2006	108,266,631	4,124,523	4%	50,082	4%
	2007	121,895,279	9,601,387	8%	54,405	5%
	2008	137,228,636	9,464,000	7%	58,834	6%
	2009	146,783,646	14,396,475	10%	61,275	6%
	2010	157,044,149	18,532,382	12%	64,748	7%
	2011	170,045,482	18,642,615	11%	70,309	8%
	2012	193,342,609	23,728,913	12%	77,353	8%
	2013	201,251,429	26,201,269	13%	79,455	9%
	2014	196,209,517	34,432,838	18%	78,588	10%
	2015	183,819,465	40,611,186	22%	77,807	11%
2016	174,917,980	38,574,940	22%	77,020	12%	
Projected Future Experience	2017	172,241,693	54,502,773	32%	75,896	13%
	2018	165,047,886	64,573,658	39%	74,783	14%
	2019	193,905,673	69,864,427	36%	69,593	15%
	2020	219,884,359	74,797,204	34%	68,507	16%
	2021	209,608,788	86,868,963	41%	67,380	18%
	2022	192,251,573	100,252,490	52%	66,200	19%
	2023	185,256,046	115,223,460	62%	64,959	21%
	2024	181,165,775	131,965,598	73%	63,654	22%
	2025	176,650,552	150,706,199	85%	62,280	24%
	2026	172,174,308	171,313,984	100%	60,835	26%
	2027	167,573,253	195,218,527	116%	59,310	29%
	2028	162,766,675	222,801,144	137%	57,693	31%
	2029	157,844,724	252,934,816	160%	55,984	34%
	2030	152,798,932	285,289,591	187%	54,182	37%
	2031	147,499,211	319,603,964	217%	52,285	40%
	2032	141,934,047	355,112,169	250%	50,298	43%
	2033	136,199,570	391,578,105	288%	48,223	47%
	2034	130,229,439	428,512,082	329%	46,065	50%
	2035	124,031,369	464,671,676	375%	43,834	54%
	2036	117,615,741	499,147,320	424%	41,537	58%
	2037	111,075,348	531,236,282	478%	39,188	62%
	2038	104,402,975	560,226,140	537%	36,801	66%
	2039	97,626,961	585,041,762	599%	34,391	70%
	2040	90,813,881	604,503,781	666%	31,976	74%
	2041	83,998,197	618,268,543	736%	29,574	78%
	2042	77,243,782	626,199,721	811%	27,203	81%
	2043	70,608,758	628,123,912	890%	24,881	85%
	2044	64,143,595	624,119,494	973%	22,627	88%
	2045	57,898,999	614,301,538	1,061%	20,456	92%
	2046	51,922,915	598,999,614	1,154%	18,383	95%
	2047	46,256,958	578,751,855	1,251%	16,421	98%
	2048	40,934,871	553,860,871	1,353%	14,580	100%
2049	35,982,176	525,379,988	1,460%	12,866	103%	
2050	31,415,738	493,889,217	1,572%	11,285	105%	
2051	27,244,607	460,485,896	1,690%	9,839	107%	
2052-2056	87,099,966	1,782,225,558	2,046%	32,070	114%	
2057-2061	35,505,612	1,008,831,723	2,841%	13,781	117%	
2062-2066	12,782,679	488,059,780	3,818%	5,290	119%	
2067-2071	4,292,602	205,074,360	4,777%	1,874	119%	
2072-2076	1,372,527	74,896,024	5,457%	627	119%	

With Interest Accum./Disc. To 12/31/2016

History	2,606,149,452	300,048,738	12%
Future	2,714,409,444	6,039,206,031	222%
Lifetime	5,320,558,896	6,339,254,769	119%

Attachment 2-a
Massachusetts Mutual Life Insurance Company
Written Premium and Paid Claim Experience and Projections by Calendar Year
Nationwide Experience Before Requested Rate Increase
All Rate Series Combined

	Calendar Year	Actual or Projected Experience using Current Assumptions			Cumulative Loss Ratio with interest
		Written Premium	Paid Claims	Loss Ratio	Actual (Column C) with Max. Val. Interest
Historical Experience	2000	1,878,007	0	0%	0%
	2001	11,262,528	6,991	0%	0%
	2002	25,232,401	51,876	0%	0%
	2003	43,290,560	183,242	0%	0%
	2004	65,200,404	556,089	1%	1%
	2005	95,453,005	1,114,685	1%	1%
	2006	112,122,170	1,842,521	2%	1%
	2007	126,500,785	2,631,651	2%	1%
	2008	140,433,434	3,863,131	3%	2%
	2009	149,440,740	5,685,233	4%	2%
	2010	160,896,394	7,016,165	4%	2%
	2011	176,563,524	10,100,677	6%	3%
	2012	198,199,074	13,034,548	7%	3%
	2013	200,956,738	16,349,521	8%	4%
	2014	192,782,488	20,017,393	10%	4%
	2015	180,605,958	23,989,973	13%	5%
2016	172,712,913	28,847,827	17%	6%	
Projected Future Experience	2017	170,076,692	33,045,143	19%	7%
	2018	162,883,493	39,440,779	24%	8%
	2019	157,488,183	53,183,751	34%	9%
	2020	152,105,829	66,502,227	44%	10%
	2021	144,720,392	78,196,607	54%	12%
	2022	135,275,414	91,171,435	67%	13%
	2023	132,052,277	105,785,254	80%	15%
	2024	129,135,885	122,193,821	95%	17%
	2025	125,972,301	140,547,002	112%	19%
	2026	122,828,582	160,988,270	131%	22%
	2027	119,533,486	184,020,077	154%	24%
	2028	116,101,457	210,215,528	181%	27%
	2029	112,564,088	239,708,431	213%	30%
	2030	108,875,455	272,408,420	250%	33%
	2031	105,014,186	308,145,072	293%	37%
	2032	100,956,343	346,577,976	343%	41%
	2033	96,772,986	387,336,112	400%	45%
	2034	92,411,251	429,979,629	465%	49%
	2035	87,882,975	473,808,483	539%	53%
	2036	83,243,964	517,970,219	622%	58%
	2037	78,493,237	561,574,496	715%	63%
	2038	73,652,147	603,712,566	820%	68%
	2039	68,760,834	643,365,873	936%	73%
	2040	63,848,670	679,359,880	1,064%	78%
	2041	58,950,269	710,656,440	1,206%	83%
	2042	54,109,240	736,435,300	1,361%	88%
	2043	49,368,366	756,032,970	1,531%	93%
	2044	44,763,398	768,974,545	1,718%	98%
	2045	40,329,338	774,954,374	1,922%	103%
	2046	36,099,606	773,878,639	2,144%	108%
2047	32,101,872	765,851,955	2,386%	112%	
2048	28,358,542	751,099,688	2,649%	116%	
2049	24,885,487	730,122,156	2,934%	120%	
2050	21,693,223	703,557,896	3,243%	124%	
2051	18,785,651	672,227,470	3,578%	127%	
2052-2056	59,877,453	2,786,609,687	4,654%	140%	
2057-2061	24,366,250	1,777,077,387	7,293%	146%	
2062-2066	8,816,276	967,438,650	10,973%	149%	
2067-2071	2,989,820	460,838,853	15,414%	150%	
2072-2076	968,136	194,455,814	20,086%	151%	

With Interest Accum./Disc. To 12/31/2016

History	2,682,522,330	158,143,217	6%
Future	2,028,597,280	6,940,538,712	342%
Lifetime	4,711,119,609	7,098,681,929	151%

Attachment 2-b
Massachusetts Mutual Life Insurance Company
Written Premium and Paid Claim Experience and Projections by Calendar Year
Nationwide Experience After Requested Rate Increase
All Rate Series Combined

	Calendar Year	Actual or Projected Experience using Current Assumptions			Cumulative Loss Ratio with interest
		Written Premium	Paid Claims	Loss Ratio	Actual (Column C) with Max. Val. Interest
Historical Experience	2000	1,878,007	0	0%	0%
	2001	11,262,528	6,991	0%	0%
	2002	25,232,401	51,876	0%	0%
	2003	43,290,560	183,242	0%	0%
	2004	65,200,404	556,089	1%	1%
	2005	95,453,005	1,114,685	1%	1%
	2006	112,122,170	1,842,521	2%	1%
	2007	126,500,785	2,631,651	2%	1%
	2008	140,433,434	3,863,131	3%	2%
	2009	149,440,740	5,685,233	4%	2%
	2010	160,896,394	7,016,165	4%	2%
	2011	176,563,524	10,100,677	6%	3%
	2012	198,199,074	13,034,548	7%	3%
	2013	200,956,738	16,349,521	8%	4%
	2014	192,782,488	20,017,393	10%	4%
	2015	180,605,958	23,989,973	13%	5%
2016	172,712,913	28,847,827	17%	6%	
Projected Future Experience	2017	170,057,168	33,045,143	19%	7%
	2018	162,864,763	39,440,779	24%	8%
	2019	210,316,180	51,777,911	25%	9%
	2020	216,722,642	61,677,736	28%	10%
	2021	204,265,932	69,833,458	34%	11%
	2022	188,930,406	79,409,242	42%	12%
	2023	184,272,089	90,681,409	49%	13%
	2024	180,095,327	103,641,208	58%	15%
	2025	175,502,051	118,348,185	67%	16%
	2026	171,042,182	134,889,548	79%	18%
	2027	166,389,303	153,645,651	92%	20%
	2028	161,544,851	175,078,540	108%	22%
	2029	156,602,171	199,291,899	127%	24%
	2030	151,476,092	226,205,076	149%	26%
	2031	146,118,227	255,670,003	175%	29%
	2032	140,487,922	287,401,940	205%	32%
	2033	134,706,794	321,094,203	238%	34%
	2034	128,668,405	356,387,525	277%	37%
	2035	122,390,811	392,710,189	321%	41%
	2036	115,966,744	429,366,087	370%	44%
	2037	109,387,530	465,624,180	426%	47%
	2038	102,677,319	500,737,152	488%	51%
	2039	95,895,332	533,866,984	557%	55%
	2040	89,078,834	564,041,011	633%	58%
	2041	82,273,727	590,392,741	718%	62%
	2042	75,545,049	612,235,149	810%	66%
	2043	68,949,707	629,009,583	912%	70%
	2044	62,538,048	640,319,389	1,024%	73%
	2045	56,359,309	645,901,781	1,146%	77%
	2046	50,460,535	645,663,777	1,280%	80%
2047	44,880,928	639,672,844	1,425%	83%	
2048	39,652,459	628,097,929	1,584%	86%	
2049	34,798,089	611,338,361	1,757%	89%	
2050	30,333,292	589,909,545	1,945%	92%	
2051	26,264,368	564,473,873	2,149%	94%	
2052-2056	83,627,760	2,351,265,297	2,812%	103%	
2057-2061	33,883,376	1,513,866,684	4,468%	108%	
2062-2066	12,169,227	832,402,692	6,840%	110%	
2067-2071	4,087,762	399,672,440	9,777%	111%	
2072-2076	1,308,279	169,338,294	12,944%	111%	

With Interest Accum./Disc. To 12/31/2016

History	2,682,522,330	158,143,217	6%
Future	2,695,580,756	5,837,920,952	217%
Lifetime	5,378,103,085	5,996,064,169	111%

Attachment 3-a
Massachusetts Mutual Life Insurance Company
Earned Premium and Incurred Claim Experience and Projections by Calendar Year
Pennsylvania-Specific Experience Before Requested Rate Increase
All Rate Series Combined

	Calendar Year	Actual or Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	
Historical Experience	2000	88,042	0	0%	279	0%
	2001	946,825	0	0%	892	0%
	2002	2,068,456	4,873	0%	1,617	0%
	2003	3,186,334	0	0%	2,204	0%
	2004	4,187,324	468,113	11%	2,821	4%
	2005	5,724,097	133,151	2%	3,630	4%
	2006	6,541,079	130,888	2%	3,912	3%
	2007	7,211,856	21,563	0%	4,189	3%
	2008	8,068,520	537,842	7%	4,464	3%
	2009	8,485,263	40,729	0%	4,654	3%
	2010	9,204,021	656,873	7%	4,914	4%
	2011	9,947,741	1,223,248	12%	5,255	5%
	2012	11,116,923	1,907,504	17%	5,635	6%
	2013	11,452,417	1,015,127	9%	5,642	6%
	2014	11,217,500	3,218,362	29%	5,578	9%
	2015	10,947,365	3,916,851	36%	5,512	11%
2016	10,691,383	3,218,571	30%	5,448	12%	
Projected Future Experience	2017	10,823,582	4,332,767	40%	5,364	14%
	2018	10,593,765	5,063,855	48%	5,279	16%
	2019	10,358,878	5,907,183	57%	5,191	18%
	2020	10,152,512	6,888,007	68%	5,100	20%
	2021	9,803,455	7,978,643	81%	5,004	22%
	2022	9,315,304	9,185,123	99%	4,904	25%
	2023	9,079,618	10,508,336	116%	4,797	28%
	2024	8,858,083	11,980,276	135%	4,686	31%
	2025	8,620,629	13,589,144	158%	4,568	34%
	2026	8,392,892	15,333,750	183%	4,444	37%
	2027	8,154,484	17,326,785	212%	4,314	41%
	2028	7,905,807	19,584,521	248%	4,177	45%
	2029	7,635,404	21,999,516	288%	4,033	49%
	2030	7,363,491	24,534,823	333%	3,881	54%
	2031	7,081,235	27,153,382	383%	3,723	59%
	2032	6,787,926	29,793,978	439%	3,558	64%
	2033	6,485,519	32,438,697	500%	3,388	69%
	2034	6,172,142	35,036,209	568%	3,212	74%
	2035	5,846,739	37,475,086	641%	3,032	80%
	2036	5,512,223	39,692,832	720%	2,849	85%
	2037	5,173,603	41,639,105	805%	2,663	91%
	2038	4,830,774	43,242,549	895%	2,477	96%
	2039	4,485,839	44,450,635	991%	2,291	102%
	2040	4,141,472	45,200,691	1,091%	2,106	107%
	2041	3,800,184	45,438,558	1,196%	1,926	112%
	2042	3,464,997	45,244,208	1,306%	1,750	117%
	2043	3,138,614	44,559,716	1,420%	1,580	122%
	2044	2,823,744	43,486,621	1,540%	1,417	126%
	2045	2,522,841	42,001,544	1,665%	1,263	130%
	2046	2,237,995	40,163,840	1,795%	1,118	134%
2047	1,971,304	38,037,475	1,930%	984	138%	
2048	1,723,979	35,642,300	2,067%	860	141%	
2049	1,496,973	33,079,692	2,210%	746	143%	
2050	1,290,559	30,391,384	2,355%	644	146%	
2051	1,104,812	27,700,070	2,507%	551	148%	
2052-2056	3,405,768	100,346,219	2,946%	1,716	155%	
2057-2061	1,293,153	50,738,537	3,924%	680	158%	
2062-2066	435,553	22,471,315	5,159%	250	159%	
2067-2071	142,353	8,940,357	6,280%	92	159%	
2072-2076	48,554	3,406,949	7,017%	36	159%	

With Interest Accum./Disc. To 12/31/2016

History	159,240,547	19,123,658	12%
Future	134,107,264	448,589,412	335%
Lifetime	293,347,811	467,713,070	159%

Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

Attachment 3-b
Massachusetts Mutual Life Insurance Company
Earned Premium and Incurred Claim Experience and Projections by Calendar Year
Pennsylvania-Specific Experience After Requested Rate Increase
All Rate Series Combined

	Calendar Year	Actual or Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	
Historical Experience	2000	88,042	0	0%	279	0%
	2001	946,825	0	0%	892	0%
	2002	2,068,456	4,873	0%	1,617	0%
	2003	3,186,334	0	0%	2,204	0%
	2004	4,187,324	468,113	11%	2,821	4%
	2005	5,724,097	133,151	2%	3,630	4%
	2006	6,541,079	130,888	2%	3,912	3%
	2007	7,211,856	21,563	0%	4,189	3%
	2008	8,068,520	537,842	7%	4,464	3%
	2009	8,485,263	40,729	0%	4,654	3%
	2010	9,204,021	656,873	7%	4,914	4%
	2011	9,947,741	1,223,248	12%	5,255	5%
	2012	11,116,923	1,907,504	17%	5,635	6%
	2013	11,452,417	1,015,127	9%	5,642	6%
	2014	11,217,500	3,218,362	29%	5,578	9%
	2015	10,947,365	3,916,851	36%	5,512	11%
2016	10,691,383	3,218,571	30%	5,448	12%	
Projected Future Experience	2017	10,823,582	4,332,767	40%	5,364	14%
	2018	10,593,765	5,063,855	48%	5,279	16%
	2019	12,500,151	5,383,155	43%	4,868	17%
	2020	14,376,000	5,684,283	40%	4,782	19%
	2021	13,811,508	6,569,049	48%	4,692	20%
	2022	13,010,782	7,545,250	58%	4,597	22%
	2023	12,671,085	8,613,939	68%	4,498	24%
	2024	12,353,332	9,800,383	79%	4,393	26%
	2025	12,008,059	11,095,319	92%	4,282	28%
	2026	11,688,896	12,498,572	107%	4,166	30%
	2027	11,357,848	14,100,759	124%	4,044	33%
	2028	11,010,037	15,915,270	145%	3,916	36%
	2029	10,628,620	17,854,236	168%	3,780	38%
	2030	10,251,652	19,890,096	194%	3,638	42%
	2031	9,860,870	21,992,148	223%	3,490	45%
	2032	9,455,589	24,112,784	255%	3,335	48%
	2033	9,039,110	26,237,114	290%	3,175	52%
	2034	8,607,045	28,323,937	329%	3,011	56%
	2035	8,156,498	30,284,572	371%	2,842	59%
	2036	7,692,448	32,069,633	417%	2,670	63%
	2037	7,223,832	33,636,075	466%	2,497	67%
	2038	6,749,125	34,927,843	518%	2,322	71%
	2039	6,270,996	35,902,347	573%	2,148	75%
	2040	5,793,167	36,508,028	630%	1,975	78%
	2041	5,319,139	36,702,701	690%	1,806	82%
	2042	4,853,132	36,546,901	753%	1,641	85%
	2043	4,398,900	35,994,942	818%	1,482	88%
	2044	3,960,248	35,131,340	887%	1,330	92%
	2045	3,540,628	33,937,032	959%	1,185	94%
	2046	3,143,004	32,458,658	1,033%	1,050	97%
2047	2,770,322	30,745,348	1,110%	923	99%	
2048	2,424,345	28,815,379	1,189%	807	101%	
2049	2,106,475	26,750,377	1,270%	701	103%	
2050	1,817,130	24,586,254	1,353%	605	105%	
2051	1,556,499	22,420,001	1,440%	518	106%	
2052-2056	4,803,850	81,383,464	1,694%	1,614	111%	
2057-2061	1,825,825	41,380,452	2,266%	641	113%	
2062-2066	614,393	18,446,707	3,002%	236	114%	
2067-2071	199,928	7,344,228	3,673%	88	114%	
2072-2076	67,348	2,780,645	4,129%	34	115%	

With Interest Accum./Disc. To 12/31/2016

History	159,240,547	19,123,658	12%
Future	177,336,663	366,456,336	207%
Lifetime	336,577,209	385,579,994	115%

Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

Attachment 4-a
Massachusetts Mutual Life Insurance Company
Written Premium and Paid Claim Experience and Projections by Calendar Year
Pennsylvania-Specific Experience Before Requested Rate Increase
All Rate Series Combined

	Calendar Year	Actual or Projected Experience using Current Assumptions			Cumulative Loss Ratio with interest Actual (Column C) with Max. Val. Interest
		Written Premium	Paid Claims	Loss Ratio	
Historical Experience	2000	324,381	0	0%	0%
	2001	1,254,529	0	0%	0%
	2002	2,484,432	0	0%	0%
	2003	3,421,421	2,317	0%	0%
	2004	4,548,096	38,397	1%	0%
	2005	5,982,477	118,167	2%	1%
	2006	6,782,194	146,728	2%	1%
	2007	7,439,068	131,898	2%	1%
	2008	8,212,991	118,471	1%	1%
	2009	8,755,536	169,192	2%	1%
	2010	9,428,476	220,774	2%	2%
	2011	10,258,505	335,875	3%	2%
	2012	11,384,073	565,819	5%	2%
	2013	11,326,014	725,736	6%	3%
	2014	11,147,426	1,402,743	13%	3%
	2015	10,851,022	1,709,118	16%	4%
2016	10,623,021	2,055,790	19%	5%	
Projected Future Experience	2017	10,758,560	2,479,350	23%	6%
	2018	10,533,074	3,090,302	29%	8%
	2019	10,292,799	4,209,393	41%	9%
	2020	10,089,855	5,241,262	52%	11%
	2021	9,662,961	6,134,475	63%	13%
	2022	9,228,495	7,099,767	77%	15%
	2023	9,009,691	8,179,883	91%	17%
	2024	8,791,531	9,386,782	107%	20%
	2025	8,556,773	10,721,788	125%	23%
	2026	8,322,870	12,190,086	146%	25%
	2027	8,087,265	13,822,005	171%	28%
	2028	7,827,780	15,649,958	200%	32%
	2029	7,557,630	17,673,777	234%	35%
	2030	7,283,033	19,877,004	273%	39%
	2031	6,997,039	22,236,434	318%	43%
	2032	6,699,928	24,720,969	369%	47%
	2033	6,394,034	27,299,606	427%	51%
	2034	6,077,539	29,936,267	493%	56%
	2035	5,749,115	32,577,118	567%	61%
	2036	5,412,376	35,162,147	650%	66%
	2037	5,072,555	37,631,106	742%	71%
	2038	4,728,934	39,917,995	844%	76%
	2039	4,384,038	41,959,383	957%	81%
	2040	4,040,502	43,687,979	1,081%	86%
	2041	3,700,908	45,042,180	1,217%	91%
	2042	3,368,305	45,989,788	1,365%	96%
	2043	3,045,346	46,499,719	1,527%	101%
	2044	2,734,604	46,568,536	1,703%	106%
	2045	2,438,477	46,195,443	1,894%	110%
	2046	2,158,958	45,393,895	2,103%	115%
2047	1,898,015	44,190,169	2,328%	119%	
2048	1,656,676	42,613,307	2,572%	122%	
2049	1,435,785	40,711,164	2,835%	126%	
2050	1,235,476	38,537,442	3,119%	129%	
2051	1,055,652	36,159,689	3,425%	131%	
2052-2056	3,238,788	142,079,048	4,387%	141%	
2057-2061	1,221,588	82,414,462	6,747%	146%	
2062-2066	411,224	41,169,534	10,011%	148%	
2067-2071	135,032	18,407,286	13,632%	149%	
2072-2076	45,979	7,648,362	16,635%	149%	

	With Interest Accum./Disc. To 12/31/2016		
History	164,445,177	8,856,161	5%
Future	132,556,212	433,663,102	327%
Lifetime	297,001,389	442,519,264	149%

Actual written premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

Attachment 4-b
Massachusetts Mutual Life Insurance Company
Written Premium and Paid Claim Experience and Projections by Calendar Year
Pennsylvania-Specific Experience After Requested Rate Increase
All Rate Series Combined

	Calendar Year	Actual or Projected Experience using Current Assumptions			Cumulative Loss Ratio with interest
		Written Premium	Paid Claims	Loss Ratio	
Historical Experience	2000	324,381	0	0%	0%
	2001	1,254,529	0	0%	0%
	2002	2,484,432	0	0%	0%
	2003	3,421,421	2,317	0%	0%
	2004	4,548,096	38,397	1%	0%
	2005	5,982,477	118,167	2%	1%
	2006	6,782,194	146,728	2%	1%
	2007	7,439,068	131,898	2%	1%
	2008	8,212,991	118,471	1%	1%
	2009	8,755,536	169,192	2%	1%
	2010	9,428,476	220,774	2%	2%
	2011	10,258,505	335,875	3%	2%
	2012	11,384,073	565,819	5%	2%
	2013	11,326,014	725,736	6%	3%
	2014	11,147,426	1,402,743	13%	3%
	2015	10,851,022	1,709,118	16%	4%
	2016	10,623,021	2,055,790	19%	5%
Projected Future Experience	2017	10,756,265	2,479,350	23%	6%
	2018	10,530,874	3,090,302	29%	8%
	2019	13,675,070	4,093,691	30%	9%
	2020	14,281,037	4,842,632	34%	11%
	2021	13,574,306	5,443,265	40%	12%
	2022	12,875,870	6,130,465	48%	14%
	2023	12,563,125	6,939,506	55%	15%
	2024	12,254,285	7,867,101	64%	17%
	2025	11,916,962	8,909,307	75%	19%
	2026	11,590,861	10,067,959	87%	21%
	2027	11,264,940	11,363,529	101%	23%
	2028	10,898,354	12,820,853	118%	25%
	2029	10,521,278	14,438,872	137%	28%
	2030	10,140,597	16,203,594	160%	30%
	2031	9,744,904	18,095,415	186%	33%
	2032	9,334,394	20,088,906	215%	36%
	2033	8,913,095	22,158,728	249%	39%
	2034	8,476,673	24,275,480	286%	42%
	2035	8,021,689	26,395,817	329%	45%
	2036	7,554,448	28,471,598	377%	49%
	2037	7,084,290	30,454,107	430%	52%
	2038	6,608,367	32,290,120	489%	56%
	2039	6,130,156	33,928,482	553%	59%
	2040	5,653,332	35,314,700	625%	63%
	2041	5,181,507	36,399,441	702%	67%
	2042	4,718,922	37,156,125	787%	70%
	2043	4,269,284	37,559,488	880%	73%
	2044	3,836,209	37,607,237	980%	77%
	2045	3,423,076	37,299,491	1,090%	80%
	2046	3,032,729	36,647,308	1,208%	83%
2047	2,667,920	35,671,610	1,337%	86%	
2048	2,330,182	34,395,747	1,476%	88%	
2049	2,020,740	32,858,541	1,626%	90%	
2050	1,739,840	31,103,749	1,788%	93%	
2051	1,487,417	29,186,058	1,962%	95%	
2052-2056	4,568,320	114,743,168	2,512%	102%	
2057-2061	1,724,293	66,714,584	3,869%	105%	
2062-2066	579,664	33,472,006	5,774%	106%	
2067-2071	189,383	15,025,276	7,934%	107%	
2072-2076	63,612	6,246,330	9,819%	107%	

	With Interest Accum./Disc. To 12/31/2016		
History	164,445,177	8,856,161	5%
Future	176,301,266	355,440,806	202%
Lifetime	340,746,443	364,296,967	107%

Actual written premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

Attachment 5
Massachusetts Mutual Life Insurance Company
Expenses

Per Policy Expense					
	200	300	400	500	511
Issue Age	First Year				
<45	\$200	\$260	\$200	\$625	\$651
45 to 54	\$200	\$260	\$200	\$635	\$669
55 to 59	\$200	\$260	\$200	\$650	\$703
60 to 64	\$200	\$260	\$200	\$660	\$740
65 to 69	\$200	\$260	\$200	\$780	\$880
70 to 74	\$200	\$260	\$200	\$1,140	\$1,331
75 to 79	\$200	\$260	\$200	\$1,630	\$1,960
80+	\$200	\$260	\$200	\$3,810	\$2,495
	Renewal Years				
	\$40	\$60	\$0	\$60	\$60

Percent of Premium Expense*					
	200	300	400	500	511
	First Year				
	7.50%	7.50%	7.50%	19.25%	6.00%
	Renewal Years				
	7.50%	7.50%	7.50%	8.00%	6.00%

* Includes premium tax

Percent of Paid Claim Expense					
	200	300	400	500	511
	N/A	N/A	7.50%	5.00%	5.00%

Other Sales Expense					
Policy Year	200	300	400	500*	511
1	N/A	N/A	N/A	77.35%	103.75%
2	N/A	N/A	N/A	7.86%	1.50%
3	N/A	N/A	N/A	4.16%	1.20%
4	N/A	N/A	N/A	2.41%	1.00%
5	N/A	N/A	N/A	2.41%	1.00%
6	N/A	N/A	N/A	2.41%	1.00%
7	N/A	N/A	N/A	2.41%	1.00%
8	N/A	N/A	N/A	2.41%	1.00%
9	N/A	N/A	N/A	2.41%	1.00%
10	N/A	N/A	N/A	2.41%	1.00%
11+	N/A	N/A	N/A	1.11%	0.30%

*Captures the expense for the base policy; for premium in excess of the base (e.g., limited-pay riders), an alternative expense percentage is applied.

**Attachment 5
Massachusetts Mutual Life Insurance Company
Commission Schedule**

Policy Duration	200 Series							
	Issue Age							
	Lifetime-Pay				Limited-Pay			
	< 55	55 - 59	60 - 69	70+	< 55	55 - 59	60 - 69	70+
1	65%	55%	55%	45%	65%	55%	55%	45%
2 - 5	10%	10%	10%	10%	0%	0%	0%	0%
6 - 10	5%	5%	5%	5%	0%	0%	0%	0%
11+	2%	2%	2%	2%	0%	0%	0%	0%

Policy Duration	300 and 400 Series													
	Issue Age													
	Lifetime-Pay							Limited-Pay						
	< 45	45 - 49	50 - 54	55 - 59	60 - 69	70 - 79	80+	< 45	45 - 49	50 - 54	55 - 59	60 - 69	70 - 79	80+
1	70%	65%	60%	55%	50%	45%	40%	70%	65%	60%	55%	50%	45%	40%
2 - 5	6%	6%	6%	6%	6%	6%	6%	0%	0%	0%	0%	0%	0%	0%
6 - 10	3%	3%	3%	3%	3%	3%	3%	0%	0%	0%	0%	0%	0%	0%
11+	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%

Policy Duration	500* and 511 Series
1	50%
2 - 10	6%
11+	1%

*Captures the commissions for the base policy; for premium in excess of the base (e.g., limited-pay riders), an alternative commission percentage is applied

Attachment 6-a
Massachusetts Mutual Life Insurance Company
Breakdown of Nationwide Historical Incurred Claims and Reserve Balances
All Rate Series Combined

Incurred Year	Discounted to the Year of Incurral					Year-End Active Life Reserve ^[3]
	Incurred Claims ^[1]	Paid Claims	Disabled Life Reserve	IBNR Reserve	Total Claim Reserve ^[2]	
2000	0	0	0		0	
2001	64,652	64,652	0		0	
2002	527,514	524,902	2,612		2,612	
2003	1,663,767	1,632,471	31,296		31,296	
2004	1,499,223	1,499,223	0		0	
2005	5,917,061	5,726,254	190,807		190,807	
2006	4,124,523	3,559,539	564,984		564,984	
2007	9,601,387	8,161,159	1,440,228		1,440,228	
2008	9,464,000	9,101,509	362,491		362,491	
2009	14,396,475	12,323,863	2,072,611		2,072,611	
2010	18,532,382	15,432,628	3,099,754		3,099,754	
2011	18,642,615	14,627,309	4,015,306		4,015,306	
2012	23,728,913	17,322,102	6,406,812		6,406,812	
2013	26,201,269	16,963,309	9,237,960		9,237,960	
2014	34,432,838	18,775,423	15,657,415		15,657,415	
2015	40,611,186	16,249,684	24,361,501		24,361,501	
2016	38,574,940	9,097,573	29,477,367	0	29,477,367	1,479,926,687

[1] Incurred claims are the sum of paid claims, disabled life reserve, and incurred but not reported (IBNR) reserve.

[2] Claim reserve is the sum of disabled life reserve and IBNR reserve; IBNR reserve is zero as runout and claim reserve balances as of December 31, 2017 are used.

[3] Active Life Reserve is defined as interpolated terminal reserves plus unearned premium reserves.

Attachment 6-b
Massachusetts Mutual Life Insurance Company
Breakdown of Pennsylvania-Specific Historical Incurred Claims and Reserve Balances
All Rate Series Combined

Incurred Year	Discounted to the Year of Incurral					Year-End Active Life Reserve ^[3]
	Incurred Claims ^[1]	Paid Claims	Disabled Life Reserve	IBNR Reserve	Total Claim Reserve ^[2]	
2000	0	0	0		0	
2001	0	0	0		0	
2002	4,873	2,261	2,612		2,612	
2003	0	0	0		0	
2004	468,113	468,113	0		0	
2005	133,151	133,151	0		0	
2006	130,888	3,578	127,310		127,310	
2007	21,563	21,563	0		0	
2008	537,842	537,842	0		0	
2009	40,729	40,729	0		0	
2010	656,873	656,873	0		0	
2011	1,223,248	878,657	344,591		344,591	
2012	1,907,504	1,284,677	622,827		622,827	
2013	1,015,127	1,015,127	0		0	
2014	3,218,362	1,992,565	1,225,797		1,225,797	
2015	3,916,851	1,313,696	2,603,156		2,603,156	
2016	3,218,571	834,181	2,384,391	0	2,384,391	87,188,626

[1] Incurred claims are the sum of paid claims, disabled life reserve, and incurred but not reported (IBNR) reserve.

[2] Claim reserve is the sum of disabled life reserve and IBNR reserve; IBNR reserve is zero as runout and claim reserve balances as of December 31, 2017 are used.

[3] Active Life Reserve is defined as interpolated terminal reserves plus unearned premium reserves.

Attachment 7-a
Massachusetts Mutual Life Insurance Company
Nationwide Experience and Projections by Policy Year - Before Requested Rate Increase
All Rate Series Combined

Policy Year	Actual or Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
	A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
1	251,566,254	1,555,041	1%	88,834	1%
2	231,116,890	6,910,167	3%	86,266	2%
3	224,567,448	10,428,490	5%	84,339	3%
4	219,463,995	12,610,688	6%	82,821	3%
5	215,030,662	7,480,187	3%	81,582	3%
6	211,916,863	22,178,442	10%	80,521	4%
7	208,783,341	20,459,533	10%	79,520	5%
8	205,997,404	23,499,039	11%	78,668	6%
9	203,806,616	28,616,188	14%	77,829	6%
10	201,941,121	41,487,150	21%	77,028	7%
11	143,665,132	41,566,564	29%	76,207	9%
12	141,973,333	50,300,509	35%	75,348	10%
13	140,233,405	58,555,354	42%	74,383	11%
14	138,491,299	74,502,240	54%	73,363	13%
15	136,702,337	81,278,263	59%	72,259	14%
16	134,768,617	99,303,147	74%	71,089	16%
17	132,584,837	116,089,653	88%	69,815	18%
18	129,885,058	135,825,744	105%	68,456	20%
19	126,955,131	157,561,331	124%	67,013	23%
20	123,876,046	182,004,169	147%	65,483	26%
21	119,462,484	209,282,322	175%	63,865	29%
22	116,079,453	239,881,913	207%	62,156	32%
23	112,542,642	274,842,294	244%	60,348	36%
24	108,832,858	313,372,295	288%	58,437	39%
25	104,910,198	354,843,795	338%	56,419	44%
26	100,823,966	399,842,414	397%	54,294	48%
27	96,549,643	448,932,058	465%	52,062	53%
28	92,093,822	498,387,411	541%	49,729	58%
29	87,474,123	547,783,200	626%	47,302	64%
30	82,702,460	595,937,082	721%	44,792	69%
31	77,812,493	641,829,094	825%	42,213	75%
32	72,832,121	684,876,975	940%	39,582	81%
33	67,795,744	722,308,660	1,065%	36,918	87%
34	62,744,000	754,065,827	1,202%	34,242	93%
35	57,720,496	777,672,941	1,347%	31,575	99%
36	52,766,386	791,963,748	1,501%	28,942	105%
37	47,923,704	795,765,599	1,660%	26,363	110%
38	43,233,722	791,427,393	1,831%	23,861	116%
39	38,733,814	779,607,243	2,013%	21,456	121%
40	34,457,659	760,363,506	2,207%	19,165	126%
41	30,433,934	732,503,868	2,407%	17,004	130%
42	26,684,968	697,856,979	2,615%	14,985	134%
43	23,227,501	659,072,093	2,837%	13,116	138%
44	20,069,561	617,478,049	3,077%	11,402	141%
45	17,214,041	573,742,963	3,333%	9,845	144%
46	14,657,026	527,033,520	3,596%	8,445	147%
47	12,390,898	479,452,376	3,869%	7,196	149%
48	10,402,955	432,978,669	4,162%	6,093	151%
49	8,674,360	389,212,392	4,487%	5,127	152%
50	7,180,610	348,204,570	4,849%	4,288	154%
51-55	20,182,062	1,187,495,790	5,884%	12,529	158%
56-60	6,573,632	547,119,290	8,323%	4,406	160%
61-65	1,920,854	213,435,731	11,112%	1,376	161%
66-70	505,176	67,783,827	13,418%	383	161%
71-75	114,677	16,583,072	14,461%	96	161%
Total	5,301,049,833	20,045,150,856	378%	2,500,834	161%

Attachment 7-b
Massachusetts Mutual Life Insurance Company
Nationwide Experience and Projections by Policy Year - After Requested Rate Increase
All Rate Series Combined

Policy Year	Actual or Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
	A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
1	251,566,254	1,555,041	1%	88,834	1%
2	231,116,890	6,910,167	3%	86,266	2%
3	224,578,149	10,428,421	5%	84,337	3%
4	219,524,807	12,610,185	6%	82,816	3%
5	215,163,387	7,478,758	3%	81,573	3%
6	212,330,063	22,172,512	10%	80,484	4%
7	211,527,372	20,423,401	10%	79,363	5%
8	216,912,095	23,350,684	11%	78,212	6%
9	222,938,751	28,286,783	13%	77,175	6%
10	226,774,605	40,909,152	18%	76,208	7%
11	160,827,982	40,608,421	25%	75,207	8%
12	162,682,111	48,747,932	30%	74,089	9%
13	164,655,349	56,120,462	34%	72,887	10%
14	167,042,306	70,713,732	42%	71,520	12%
15	171,057,156	75,181,554	44%	69,812	13%
16	174,732,235	89,911,911	51%	68,177	15%
17	177,236,516	102,580,901	58%	66,466	16%
18	178,020,814	117,459,095	66%	64,829	18%
19	176,740,091	134,218,867	76%	63,274	20%
20	173,545,069	153,985,784	89%	61,813	22%
21	166,886,896	176,691,917	106%	60,282	24%
22	162,272,825	202,212,155	125%	58,665	26%
23	157,454,902	231,323,222	147%	56,955	29%
24	152,404,204	263,350,149	173%	55,148	32%
25	147,039,380	297,752,999	202%	53,240	35%
26	141,459,767	335,011,611	237%	51,231	38%
27	135,616,800	375,594,258	277%	49,123	41%
28	129,510,519	416,404,075	322%	46,918	45%
29	123,167,484	457,108,267	371%	44,626	49%
30	116,596,352	496,748,541	426%	42,257	53%
31	109,846,437	534,494,999	487%	39,823	57%
32	102,952,453	569,890,759	554%	37,341	61%
33	95,961,398	600,661,551	626%	34,828	66%
34	88,928,901	626,792,960	705%	32,305	70%
35	81,915,738	646,258,289	789%	29,792	74%
36	74,980,171	658,110,375	878%	27,309	78%
37	68,182,224	661,388,440	970%	24,880	82%
38	61,581,449	658,030,143	1,069%	22,522	86%
39	55,232,360	648,594,047	1,174%	20,256	90%
40	49,184,696	633,116,538	1,287%	18,098	93%
41	43,481,393	610,555,717	1,404%	16,062	96%
42	38,156,602	582,405,216	1,526%	14,160	99%
43	33,236,635	550,820,302	1,657%	12,399	102%
44	28,735,298	516,860,942	1,799%	10,783	104%
45	24,658,903	481,074,345	1,951%	9,316	107%
46	21,003,793	442,746,462	2,108%	7,994	108%
47	17,760,756	403,612,493	2,272%	6,817	110%
48	14,913,148	365,277,902	2,449%	5,775	112%
49	12,435,160	329,075,952	2,646%	4,863	113%
50	10,292,369	295,048,142	2,867%	4,069	114%
51-55	8,435,804	261,275,509	3,097%	3,385	117%
56-60	6,863,495	229,100,035	3,338%	2,801	119%
61-65	18,686,731	758,986,127	4,062%	7,971	119%
66-70	5,775,485	331,263,329	5,736%	2,679	119%
71-75	1,604,398	120,222,324	7,493%	803	119%
Total	6,446,186,927	16,831,513,854	261%	2,418,819	119%

Attachment 8-a
Massachusetts Mutual Life Insurance Company
Pennsylvania-Specific Experience and Projections by Policy Year - Before Requested Rate Increase
All Rate Series Combined

Policy Year	Actual or Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
	A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
1	15,100,001	2,091	0%	6,117	0%
2	12,442,065	75,250	1%	6,002	0%
3	12,188,172	7,073	0%	5,907	0%
4	11,966,292	538,207	4%	5,813	1%
5	11,737,109	208,840	2%	5,754	1%
6	11,610,124	574,566	5%	5,698	2%
7	11,448,336	762,647	7%	5,655	2%
8	11,327,075	788,668	7%	5,611	3%
9	11,223,950	1,223,114	11%	5,551	3%
10	11,103,451	3,830,437	34%	5,498	6%
11	10,010,841	2,884,674	29%	5,438	7%
12	9,895,339	4,157,975	42%	5,386	9%
13	9,789,204	4,657,701	48%	5,328	11%
14	9,646,171	5,038,516	52%	5,248	13%
15	9,530,565	5,170,107	54%	5,168	15%
16	9,444,230	6,700,298	71%	5,081	17%
17	9,314,771	7,928,913	85%	4,983	19%
18	9,132,697	9,405,777	103%	4,879	22%
19	8,919,824	10,897,902	122%	4,769	25%
20	8,702,804	12,561,132	144%	4,652	28%
21	8,317,609	14,405,438	173%	4,528	31%
22	8,079,075	16,452,803	204%	4,397	35%
23	7,827,402	18,764,628	240%	4,258	39%
24	7,559,577	21,285,495	282%	4,113	43%
25	7,277,449	23,956,552	329%	3,959	48%
26	6,984,390	26,826,136	384%	3,797	52%
27	6,677,632	29,931,554	448%	3,628	58%
28	6,357,989	33,011,165	519%	3,451	63%
29	6,026,524	36,020,930	598%	3,268	69%
30	5,684,804	38,905,507	684%	3,079	75%
31	5,334,749	41,565,111	779%	2,886	81%
32	4,978,753	43,946,429	883%	2,690	87%
33	4,619,535	45,881,052	993%	2,492	93%
34	4,259,980	47,399,227	1,113%	2,294	99%
35	3,903,162	48,330,116	1,238%	2,099	105%
36	3,552,196	48,607,607	1,368%	1,907	111%
37	3,210,268	48,187,128	1,501%	1,721	116%
38	2,880,265	47,276,271	1,641%	1,542	121%
39	2,565,221	45,931,562	1,791%	1,371	126%
40	2,267,433	44,091,282	1,945%	1,211	130%
41	1,989,047	41,757,701	2,099%	1,061	134%
42	1,731,419	39,080,979	2,257%	923	138%
43	1,495,749	36,240,107	2,423%	797	141%
44	1,282,377	33,307,620	2,597%	684	144%
45	1,091,145	30,338,966	2,780%	582	146%
46	921,604	27,290,615	2,961%	492	149%
47	772,926	24,313,338	3,146%	413	150%
48	643,877	21,515,792	3,342%	345	152%
49	532,854	18,950,354	3,556%	286	153%
50	437,992	16,629,001	3,797%	236	154%
51-55	1,213,475	54,133,179	4,461%	674	158%
56-60	396,523	23,594,436	5,950%	237	159%
61-65	125,240	9,723,610	7,764%	81	159%
66-70	39,543	3,674,167	9,292%	26	159%
71-75	12,029	1,152,139	9,578%	7	159%
Total	335,582,833	1,179,891,886	352%	174,073	159%

Attachment 8-b
Massachusetts Mutual Life Insurance Company
Pennsylvania-Specific Experience and Projections by Policy Year - After Requested Rate Increase
All Rate Series Combined

Policy Year	Actual or Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
	A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
1	15,100,001	2,091	0%	6,117	0%
2	12,442,065	75,250	1%	6,002	0%
3	12,188,172	7,073	0%	5,907	0%
4	11,966,292	538,207	4%	5,813	1%
5	11,737,109	208,840	2%	5,754	1%
6	11,611,891	574,544	5%	5,698	2%
7	11,523,553	761,635	7%	5,650	2%
8	11,730,464	782,615	7%	5,589	3%
9	12,049,130	1,207,772	10%	5,515	3%
10	12,191,570	3,801,417	31%	5,449	6%
11	10,932,429	2,833,572	26%	5,377	7%
12	11,053,558	4,069,934	37%	5,308	9%
13	11,178,920	4,520,470	40%	5,237	11%
14	11,316,255	4,820,202	43%	5,128	12%
15	11,608,617	4,804,899	41%	4,995	14%
16	11,953,168	6,107,883	51%	4,873	15%
17	12,182,593	7,051,462	58%	4,738	17%
18	12,331,027	8,147,579	66%	4,601	19%
19	12,354,184	9,220,378	75%	4,469	21%
20	12,207,632	10,486,710	86%	4,357	23%
21	11,604,088	11,980,456	103%	4,240	26%
22	11,281,744	13,650,956	121%	4,117	28%
23	10,941,254	15,532,658	142%	3,986	31%
24	10,576,737	17,578,489	166%	3,849	34%
25	10,191,898	19,738,713	194%	3,705	37%
26	9,793,333	22,052,111	225%	3,553	41%
27	9,375,187	24,548,207	262%	3,393	44%
28	8,938,375	27,014,159	302%	3,227	48%
29	8,484,197	29,413,540	347%	3,055	52%
30	8,014,664	31,702,766	396%	2,878	56%
31	7,532,284	33,802,827	449%	2,697	60%
32	7,040,261	35,670,765	507%	2,513	65%
33	6,542,290	37,170,973	568%	2,327	69%
34	6,042,355	38,333,615	634%	2,142	73%
35	5,544,748	39,022,061	704%	1,959	77%
36	5,053,850	39,187,967	775%	1,780	81%
37	4,574,211	38,795,914	848%	1,606	85%
38	4,109,994	38,016,526	925%	1,439	88%
39	3,665,608	36,896,256	1,007%	1,279	91%
40	3,244,452	35,387,337	1,091%	1,130	95%
41	2,849,739	33,490,891	1,175%	990	97%
42	2,483,582	31,326,980	1,261%	861	100%
43	2,147,889	29,035,210	1,352%	744	102%
44	1,843,335	26,675,145	1,447%	638	104%
45	1,569,861	24,290,849	1,547%	543	106%
46	1,326,981	21,847,680	1,646%	459	107%
47	1,113,662	19,464,524	1,748%	386	108%
48	928,258	17,226,717	1,856%	322	109%
49	768,561	15,173,385	1,974%	267	110%
50	631,971	13,317,627	2,107%	221	111%
51-55	1,751,344	43,388,935	2,477%	630	113%
56-60	571,276	18,955,237	3,318%	222	114%
61-65	179,285	7,824,580	4,364%	76	114%
66-70	55,807	2,946,661	5,280%	25	115%
71-75	16,488	918,620	5,571%	7	115%
Total	410,448,198	961,401,870	234%	167,843	115%

Letter of Authorization

To: Department of Insurance

Massachusetts Mutual Life Insurance Company ("MassMutual") has entered into a service agreement with Milliman, Inc. ("Milliman") effective October 19, 2017 that includes long-term care rate filing services on our behalf. The agreement provides, in part, that Milliman is responsible for preparing and filing for approval with state insurance departments MassMutual's long-term care rate increase filings as directed by MassMutual. Milliman is also authorized to receive, on MassMutual's behalf, written and oral communication from each state department of insurance for the purpose of completing the rate increase filing process.

Please accept this letter of authorization for the purpose stated above. Should you have any questions regarding the above, please forward your comments to:

Massachusetts Mutual Life Insurance Company
1295 State Street
Springfield, MA 01001



Roland Fawthrop, Second VP & Actuary
Massachusetts Mutual Life Insurance Company

MARCH 26, 2018
Date

Please read this letter carefully and in its entirety. It contains important information about your long term care insurance policy. Using the contact information at the end of this letter, you may contact your financial professional or our Long Term Care Administrative Office with any questions regarding this letter or your long term care insurance coverage.

[Date]

[First Name] [Last Name]

[Address]

[City], [State] [Zip]

RE: Notice of a Premium Increase to your Long Term Care Insurance Policy #[AA-XXXXXXXX] issued on [MM/DD/CCYY] in your Contract State of [Contract State]

Decision required by the Policy Anniversary Date: [MM/DD/CCYY]

Dear [Mr./Ms./Mrs.] [Last Name],

MassMutual's purpose is to help people secure their future and protect the ones they love. One way in which we do this is by offering long term care insurance and ensuring that long term care insurance benefits will be available when our policyowners need them.

Your long term care insurance policy is an important component of your plans to help you maintain your financial independence and standard of living throughout your lifetime. When you purchased your policy, you made a wise decision to plan ahead so that you have options for your long term care needs if and when you may need them.

After a careful and thorough assessment, we have made the difficult decision to increase premium rates on many of our existing long term care insurance policies. To help you understand the need for this increase, please be aware that many factors have changed over the years that have impacted the pricing of long term care insurance policies. For example, the cost of long term care services continues to increase and today, people are living longer and the need for long term care is growing rapidly. Due to these types of changes, we now expect to pay higher amounts of benefits than had been originally anticipated. This anticipated increase in expected benefits has led to the need for us to increase premium rates.

It is important to know that no individual or policy has been singled out due to a change in the insured's age, health, claims history, or any other individual characteristic.

As is common in the long term care insurance industry, MassMutual long term care insurance policies are guaranteed renewable. This means as long as you pay your premium, we cannot cancel or refuse to renew your policy, but we may increase premium rates. The regulatory process to implement a premium rate increase has been completed in your Contract State, and as a result, your policy is among others being impacted.



We understand that a premium increase may be difficult, and we are committed to helping you understand your options so that you can make the best decision for your personal situation.

About this increase

The following grid provides information on your current long term care insurance policy and details regarding the change to your policy's premium:

Current Benefit Period	[Lifetime]
Current Daily Benefit Amount	[\$9,999.99]
Current Elimination Period	[90 days]
Inflation Protection	[None]
Your Current [Mode] Premium	[\$999.99]
Your New [Mode] Premium	[\$999.99]
Percentage Increase in Premium	[999.9%]
Effective Date of New Premium	[MM/DD/CCYY] (Policy Anniversary Date)

[IMPORTANT NOTICE REGARDING WAIVER OF PREMIUM: Your premium will increase on the Policy Anniversary Date of [MM/DD/CCYY] even while your policy's premium is being waived. Your current coverage will continue and your increased premium will continue to be waived.]

Understanding your options

You always have the option to continue your current coverage at the new premium.

However, there may be several options available to you that will reduce your policy's premium, such as:

- **Reduce the Benefit Period (BP).** Reducing the BP will reduce the maximum length of time the policy will pay benefits and the total amount of benefits payable under your policy. Any daily, weekly, monthly or annual benefit limits would continue to apply.
- **Reduce the maximum Daily Benefit Amount (DBA).** Reducing the maximum DBA will reduce the maximum amount the policy will pay for covered expenses per day and the total amount of benefits payable under your policy. This will also reduce any weekly, monthly or annual benefit amount limits available on the policy.
- **Extend the Elimination Period (EP).** Extending the EP increases the length of time you will be responsible for paying for long term care services before we will begin paying benefits.

- **Remove or reduce optional riders.** Removing or reducing an optional rider will mean you will no longer have or be eligible for the features and benefits that the rider provides. The following riders are attached to your policy:
 - [Rider Name 1][none]
 - [[Rider Name 2]
 - [Rider Name 3]]

[Removing or reducing an inflation protection rider may impact future eligibility under your Contract State's partnership program.]

[Removing or reducing benefits and/or riders may impact any covered partner benefit.]

[You should consider the number of remaining premium payments on your policy before reducing your benefits.]

Each option should be viewed in light of your individual needs and financial situation. By reducing the policy's benefits, you reduce the coverage available to pay for future care. You may not be able to increase your benefits at a later time, even if you offer to pay the increased premium amount.

A Personalized Options Election Form and Instructions are being provided to you in this package, which outline the above options for reducing your coverage and the impact on your premium. We recommend you review all options available to you, including paying the increased premium, with trusted family members, your financial professional and/or a member of our Long Term Care Administrative Office to help you determine the approach that is most appropriate for your needs.

You may also wish to contact the State Health Insurance Assistance Program (SHIP) located in your state, or the State Department/Bureau of Insurance if you need additional counseling to help determine how to proceed. Please go to www.shiptalk.org to find the nearest SHIP to you or http://naic.org/state_web_map.htm for information on how to contact your State Department/Bureau of Insurance.

Possible future changes

It is possible that rates could increase again in the future. If they do, we will plan to follow a similar notification process.

What you need to do

1. **If you want to keep your current coverage, simply pay your policy's new [mode] premium by the Policy Anniversary Date of [MM/DD/CCYY]. We do not need to hear from you, and you do not need to return the Personalized Options Election Form.**

2. If you want to change your current coverage, complete and return the enclosed Personalized Options Election Form or otherwise submit your change request in writing by the Policy Anniversary Date of [MM/DD/CCYY].
3. If you decide not to continue coverage, complete and return the Personalized Options Election Form to choose the [Contingent Benefit Upon Lapse option] [Nonforfeiture Rider].

[Note: If we do not hear from you and you do not pay the new premium, your coverage will continue under the terms of your Nonforfeiture Rider for lapse due to non-payment of premium.]

[Note: If we do not hear from you and you do not pay the new premium, your policy will lapse due to non-payment of premium. If applicable, the Contingent Benefit Upon Lapse option outlined later in this packet will automatically be provided to you.]

[IMPORTANT NOTE ABOUT BILLING: If we do not hear from you at least 50 days prior to the Policy Anniversary Date of [MM/DD/CCYY], your next bill will reflect the new premium based on your current coverage. However, as long as we receive your request to change coverage by the Policy Anniversary Date of [MM/DD/CCYY], we will process your request effective as of that date, notify you of the new premium due, and refund excess premium paid, if any.]

If your payment is made via a third-party account or online banking, please make appropriate arrangements to revise the payment amount.]

[IMPORTANT NOTE ABOUT PRE-AUTHORIZED CHECKING (PAC) WITHDRAWALS: If we do not hear from you at least 15 days prior to [MM/DD/CCYY], an amount equal to the new monthly premium for your current coverage will be withdrawn from your checking account on that date. However, as long as we receive your request to change coverage by your Policy Anniversary Date of [MM/DD/CCYY], we will process your request effective as of that date, notify you of the premium amount for your next monthly PAC withdrawal and refund excess premium paid, if any.]

The need for care can be one of the most significant challenges a person can face, both personally and financially. We have seen the difference that long term care insurance coverage has made in the lives of our customers and their family members. Although the cost for this insurance is increasing, it provides valuable coverage that may not be available from health insurance or government programs.

We recommend that you carefully review all the options available to you (including paying the rate increase and considering any available benefit reduction options) with trusted family members, a financial professional and/or a member of our Long Term Care Administrative Office to help you determine which option may be most appropriate.

We value your business and trust, and remain committed to helping you with your long term care needs. And we are here to help you.



Sincerely,

[Executive]
[Title]

PS: Please retain a copy of this letter with your policy for future reference.

Enclosures: Instructions, Personalized Options Election Form

Financial Professional	Massachusetts Mutual Life Insurance Co. Long Term Care Administrative Office
[Agent Name] [Agency Name] [Agent Phone]	MassMutual Long Term Care Administrative Office 21600 Oxnard Street, Suite 1500 PO Box 4243 Woodland Hills, CA 91367 T: (888) 505-0394 Mon. - Fri., 10 AM to 8 PM ET

[Important Information about the Contingent Benefit Upon Lapse Option

If you decide not to pay the increased premiums associated with your long term care insurance policy, and your policy lapses within 120 days of the Policy Anniversary Date of [MM/DD/CCYY], you may convert your policy to a paid-up status with reduced benefits and no future premiums will be due.

Continuing your coverage beyond 120 days after the Policy Anniversary Date of [MM/DD/CCYY] voids the Contingent Benefit Upon Lapse option.

The following terms apply to this option:

- Electing this option will not increase your coverage, which means the total benefits paid under the policy will never exceed the maximum benefits that would be payable had the policy remained in premium paying status.
- Subject to the above, your [Total] Benefit Amount will be reduced to the greater of the total of premiums paid for the policy and riders or 30 times the Daily Benefit Amount on the date of policy lapse.
- Benefits will be paid subject to the daily/weekly/monthly/annual benefit limits in effect on the date of policy lapse.
- No further benefit increases will occur under an inflation protection rider, if attached to the policy.
- Other than as described above, your coverage is subject to the same policy benefit provisions, Elimination Period, limitations and exclusions, and all other provisions of the policy and riders that were in effect on the date of policy lapse.

[Your limited pay policy also offers an additional Contingent Benefit Upon Lapse option where both the [Total] Benefit Amount and Daily Benefit Amount are modified as shown in the Personalized Options Election Form.]

By exercising a Contingent Benefit Upon Lapse option, you may be significantly reducing your policy benefits. Therefore, careful consideration is strongly recommended.]

[This page intentionally left blank.]

Instructions to complete the Personalized Options Election Form

The Personalized Options Election Form in this package outlines options available to you if you would like to explore adjusting your long term care insurance policy's new premium amount by reducing or removing benefits.

- This form may not include all options available to you. Additionally, options may not be of equal value and some options can reduce the new premium by more than others.
- Please review this form carefully on your own, with trusted family members, your financial professional and/or a member of our Long Term Care Administrative Office to help you determine which option may be most appropriate.
- To make changes to your policy, this form must be received in our long term care administrative office no later than the Policy Anniversary Date of [MM/DD/CCYY].
- Once we've processed the change you elected, we will send you a confirmation letter along with new policy specification pages to keep with your policy.
- **All policy change requests must be received in writing.**

Personalized Options Election Form

Please return no later than the Policy Anniversary Date: [MM/DD/CCYY]

Prepared for: [Policyowner Name] [& Joint Policyowner Name]
 MassMutual Long Term Care Insurance Policy #: [AA-XXXXXXXX]

IMPORTANT: You can only choose one election on this form. The new premium amounts shown are based on only one change taking effect on the Policy Anniversary Date of [MM/DD/CCYY].

If you wish to request a change to your policy not listed on this form, or a combination of changes, please call your financial professional or our Long Term Care Administrative Office using the contact information at the end of this form.

Reduce the Benefit Period

[Current Benefit Period]	Available Options	New [Mode] Premium	Policy Change Election
[Lifetime]	[10 Year]	[\$99,999.99]	<input type="checkbox"/>
	[6 Year]	[\$99,999.99]	<input type="checkbox"/>
	[5 Year]	[\$99,999.99]	<input type="checkbox"/>
	[4 Year]	[\$99,999.99]	<input type="checkbox"/>
	[3 Year]	[\$99,999.99]	<input type="checkbox"/>
	[2 Year]	[\$99,999.99]	<input type="checkbox"/>

[Your policy is already at the minimum allowed in your state, therefore this option is not available to you.]

Reduce the Daily Benefit Amount

[Current DBA]	Available Options	New [Mode] Premium	Policy Change Election
[\$9,999.99]	[\$9,999.99]	[\$99,999.99]	<input type="checkbox"/>
	[\$9,999.99]	[\$99,999.99]	<input type="checkbox"/>

[Your policy is already at the minimum allowed in your state, therefore this option is not available to you.]

Extend the Elimination Period

[Current Elimination Period]	Available Options	New [Mode] Premium	Policy Change Election
[0 day]	[30 day]	[\$99,999.99]	<input type="checkbox"/>
	[60 day]	[\$99,999.99]	<input type="checkbox"/>
	[90 day]	[\$99,999.99]	<input type="checkbox"/>
	[180 day]	[\$99,999.99]	<input type="checkbox"/>

[Your policy is already at the maximum allowed in your state, therefore this option is not available to you.]

[Non-Forfeiture Rider] [Contingent Benefit Upon Lapse option]

[Non-Forfeiture Rider][Contingent Benefit Upon Lapse option]	Policy Change Election
<p>I want to discontinue paying premiums and convert my policy to paid-up status with reduced benefits. The values below are calculated based on premium and benefits paid as of [file extract date]. The actual values will be calculated based on the date of policy lapse.</p> <p>[Option 1:] The new [Total] Benefit Amount is [\$99,999.99] and the new Daily Benefit Amount is [\$9,999.99].</p> <p>[Option 2: The new [Total] Benefit Amount is [\$99,999.99] and the new Daily Benefit Amount is [\$9,999.99].]</p>	<p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p>

You have up until the Policy Anniversary Date of [MM/DD/CCYY] to make or modify any changes you elect on this form.

By signing below, I agree that any change(s) will be effective on the Policy Anniversary Date of [MM/DD/CCYY] provided this form is received at our Long Term Care Administrative Office by that date.

Name of Policyowner: [Policyowner Name]
[Name of Joint Policyowner: [Joint Policyowner Name]]
Name of Insured: [Insured Name]
[Name of Joint Insured: [Joint Insured Name]]
Policy #: [Policy AA-XXXXXXXX]

Signature of Policyowner: _____

Signature of Joint Policyowner: _____
(if applicable)

Date: _____

Please return this form using the enclosed postage-paid envelope.

Financial Professional	Massachusetts Mutual Life Insurance Co. Long Term Care Administrative Office
[Agent Name] [Agency Name] [Agent Phone]	MassMutual Long Term Care Administrative Office 21600 Oxnard Street, Suite 1500 PO Box 4243 Woodland Hills, CA 91367 T: (888) 505-0394 Mon. - Fri., 10 AM to 8 PM ET