



LIFE, ACCIDENT AND HEALTH COMPANIES/FRATERNAL BENEFIT SOCIETIES - ASSOCIATION EDITION

# QUARTERLY STATEMENT

AS OF SEPTEMBER 30, 2021

OF THE CONDITION AND AFFAIRS OF THE

## MML Bay State Life Insurance Company

NAIC Group Code 0435 0435 NAIC Company Code 70416 Employer's ID Number 43-0581430  
(Current) (Prior)

Organized under the Laws of Connecticut, State of Domicile or Port of Entry CT

Country of Domicile United States of America

Licensed as business type: Life, Accident and Health [ X ] Fraternal Benefit Societies [ ]

Incorporated/Organized 04/01/1935 Commenced Business 07/01/1894

Statutory Home Office 100 Bright Meadow Boulevard, Enfield, CT, US 06082  
(Street and Number) (City or Town, State, Country and Zip Code)

Main Administrative Office 1295 State Street  
(Street and Number)  
Springfield, MA, US 01111 413-788-8411  
(City or Town, State, Country and Zip Code) (Area Code) (Telephone Number)

Mail Address 1295 State Street, Springfield, MA, US 01111  
(Street and Number or P.O. Box) (City or Town, State, Country and Zip Code)

Primary Location of Books and Records 1295 State Street  
(Street and Number)  
Springfield, MA, US 01111 413-788-8411  
(City or Town, State, Country and Zip Code) (Area Code) (Telephone Number)

Internet Website Address www.massmutual.com

Statutory Statement Contact Trevor Wade Gordon, 617-695-4321  
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### OFFICERS

President and Chief Executive Officer Roger William Crandall Treasurer Julieta Giselle Sinisgalli #  
Secretary Akintokunbo Akinbajo Appointed Actuary Vy Quoc Ho

### OTHER

Elizabeth Ward Chicares, Executive Vice President and Chief Financial Officer Michael Robert Fanning, Executive Vice President Melvin Timothy Corbett, Executive Vice President

### DIRECTORS OR TRUSTEES

Roger William Crandall - Chairman Michael Robert Fanning Elizabeth Ward Chicares  
Michael James O'Connor

State of Massachusetts SS:  
County of Hampden

The officers of this reporting entity being duly sworn, each depose and say that they are the described officers of said reporting entity, and that on the reporting period stated above, all of the herein described assets were the absolute property of the said reporting entity, free and clear from any liens or claims thereon, except as herein stated, and that this statement, together with related exhibits, schedules and explanations therein contained, annexed or referred to, is a full and true statement of all the assets and liabilities and of the condition and affairs of the said reporting entity as of the reporting period stated above, and of its income and deductions therefrom for the period ended, and have been completed in accordance with the NAIC Annual Statement Instructions and Accounting Practices and Procedures manual except to the extent that: (1) state law may differ; or, (2) that state rules or regulations require differences in reporting not related to accounting practices and procedures, according to the best of their information, knowledge and belief, respectively. Furthermore, the scope of this attestation by the described officers also includes the related corresponding electronic filing with the NAIC, when required, that is an exact copy (except for formatting differences due to electronic filing) of the enclosed statement. The electronic filing may be requested by various regulators in lieu of or in addition to the enclosed statement.

Roger William Crandall  
President and Chief Executive Officer

Akintokunbo Akinbajo  
Secretary

Julieta Giselle Sinisgalli  
Treasurer

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_

- a. Is this an original filing? ..... Yes [ X ] No [ ]  
b. If no,  
1. State the amendment number.....  
2. Date filed .....  
3. Number of pages attached.....

## STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**ASSETS**

	Current Statement Date			4 December 31 Prior Year Net Admitted Assets
	1 Assets	2 Nonadmitted Assets	3 Net Admitted Assets (Cols. 1 - 2)	
1. Bonds .....	221,339,348		221,339,348	243,446,730
2. Stocks:				
2.1 Preferred stocks .....				
2.2 Common stocks .....	11,685		11,685	
3. Mortgage loans on real estate:				
3.1 First liens .....	1,860,082		1,860,082	2,090,393
3.2 Other than first liens .....				
4. Real estate:				
4.1 Properties occupied by the company (less \$ encumbrances) .....				
4.2 Properties held for the production of income (less \$ ..... encumbrances) .....				
4.3 Properties held for sale (less \$ encumbrances) .....				
5. Cash (\$ .....741,832 ), cash equivalents (\$ .....93,994,557 ) and short-term investments (\$ .....55,982,868 ) .....	150,719,257		150,719,257	103,615,595
6. Contract loans (including \$ ..... premium notes) .....	91,137,651		91,137,651	92,724,451
7. Derivatives .....				
8. Other invested assets .....				
9. Receivables for securities .....	3,208,556		3,208,556	
10. Securities lending reinvested collateral assets .....				
11. Aggregate write-ins for invested assets .....				
12. Subtotals, cash and invested assets (Lines 1 to 11) .....	468,276,580		468,276,580	441,877,170
13. Title plants less \$ ..... charged off (for Title insurers only) .....				
14. Investment income due and accrued .....	4,306,873	44,233	4,262,641	4,048,880
15. Premiums and considerations:				
15.1 Uncollected premiums and agents' balances in the course of collection .....				
15.2 Deferred premiums, agents' balances and installments booked but deferred and not yet due (including \$ ..... earned but unbilled premiums) .....	(4,324,360)		(4,324,360)	(2,277,498)
15.3 Accrued retrospective premiums (\$ ..... ) and contracts subject to redetermination (\$ ..... ) .....				
16. Reinsurance:				
16.1 Amounts recoverable from reinsurers .....	8,254,224		8,254,224	7,479,473
16.2 Funds held by or deposited with reinsured companies .....				
16.3 Other amounts receivable under reinsurance contracts .....	46,550,361		46,550,361	35,715,673
17. Amounts receivable relating to uninsured plans .....				
18.1 Current federal and foreign income tax recoverable and interest thereon .....	4,451,311		4,451,311	3,991,574
18.2 Net deferred tax asset .....	3,605,570	1,826,378	1,779,192	1,970,108
19. Guaranty funds receivable or on deposit .....	153,256		153,256	159,879
20. Electronic data processing equipment and software .....				
21. Furniture and equipment, including health care delivery assets (\$ ..... ) .....				
22. Net adjustment in assets and liabilities due to foreign exchange rates .....				
23. Receivables from parent, subsidiaries and affiliates .....	202,713		202,713	173,473
24. Health care (\$ ..... ) and other amounts receivable .....				
25. Aggregate write-ins for other than invested assets .....				149,210
26. Total assets excluding Separate Accounts, Segregated Accounts and Protected Cell Accounts (Lines 12 to 25) .....	531,476,528	1,870,611	529,605,917	493,287,942
27. From Separate Accounts, Segregated Accounts and Protected Cell Accounts .....	4,889,383,145		4,889,383,145	4,858,831,848
28. Total (Lines 26 and 27) .....	5,420,859,673	1,870,611	5,418,989,062	5,352,119,790
<b>DETAILS OF WRITE-INS</b>				
1101. ....				
1102. ....				
1103. ....				
1198. Summary of remaining write-ins for Line 11 from overflow page .....				
1199. Totals (Lines 1101 through 1103 plus 1198)(Line 11 above) .....				
2501. Miscellaneous other assets .....				149,210
2502. ....				
2503. ....				
2598. Summary of remaining write-ins for Line 25 from overflow page .....				
2599. Totals (Lines 2501 through 2503 plus 2598)(Line 25 above) .....				149,210

## STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**LIABILITIES, SURPLUS AND OTHER FUNDS**

	1 Current Statement Date	2 December 31 Prior Year
1. Aggregate reserve for life contracts \$ .....142,709,795 less \$ ..... included in Line 6.3 (including \$ .....127,269,164 Modco Reserve).....	142,709,795	143,124,981
2. Aggregate reserve for accident and health contracts (including \$ ..... Modco Reserve).....		
3. Liability for deposit-type contracts (including \$ ..... Modco Reserve).....	15,434,111	13,771,784
4. Contract claims:		
4.1 Life .....	6,186,882	7,542,397
4.2 Accident and health .....		
5. Policyholders' dividends/refunds to members \$ ..... and coupons \$ ..... due and unpaid .....		
6. Provision for policyholders' dividends, refunds to members and coupons payable in following calendar year - estimated amounts:		
6.1 Policyholders' dividends and refunds to members apportioned for payment (including \$ ..... Modco).....		
6.2 Policyholders' dividends and refunds to members not yet apportioned (including \$ ..... Modco).....		
6.3 Coupons and similar benefits (including \$ ..... Modco).....		
7. Amount provisionally held for deferred dividend policies not included in Line 6 .....		
8. Premiums and annuity considerations for life and accident and health contracts received in advance less \$ ..... discount; including \$ ..... accident and health premiums .....		
9. Contract liabilities not included elsewhere:		
9.1 Surrender values on canceled contracts .....		
9.2 Provision for experience rating refunds, including the liability of \$ ..... accident and health experience rating refunds of which \$ ..... is for medical loss ratio rebate per the Public Health Service Act .....	18,062,577	20,144,004
9.3 Other amounts payable on reinsurance, including \$ ..... assumed and \$ ..... 22,977,906 ceded .....	22,977,906	8,434,112
9.4 Interest Maintenance Reserve .....	1,007,984	606,773
10. Commissions to agents due or accrued-life and annuity contracts \$ ..... , accident and health \$ ..... and deposit-type contract funds \$ .....	8,886	20,643
11. Commissions and expense allowances payable on reinsurance assumed .....		
12. General expenses due or accrued .....	3,002	
13. Transfers to Separate Accounts due or accrued (net) (including \$ ..... (380,356) accrued for expense allowances recognized in reserves, net of reinsured allowances).....	19,114,767	13,792,358
14. Taxes, licenses and fees due or accrued, excluding federal income taxes .....	150,304	171,288
15.1 Current federal and foreign income taxes, including \$ ..... on realized capital gains (losses).....		
15.2 Net deferred tax liability .....		
16. Unearned investment income .....		
17. Amounts withheld or retained by reporting entity as agent or trustee .....	105,618	61,388
18. Amounts held for agents' account, including \$ ..... agents' credit balances .....		
19. Remittances and items not allocated .....	827,709	1,352,348
20. Net adjustment in assets and liabilities due to foreign exchange rates .....		
21. Liability for benefits for employees and agents if not included above .....		
22. Borrowed money \$ ..... and interest thereon \$ .....		
23. Dividends to stockholders declared and unpaid .....		
24. Miscellaneous liabilities:		
24.01 Asset valuation reserve .....	7,036,444	7,192,889
24.02 Reinsurance in unauthorized and certified (\$ ..... ) companies .....		
24.03 Funds held under reinsurance treaties with unauthorized and certified (\$ ..... ) reinsurers .....		
24.04 Payable to parent, subsidiaries and affiliates .....	4,259,370	2,169,121
24.05 Drafts outstanding .....		
24.06 Liability for amounts held under uninsured plans .....		
24.07 Funds held under coinsurance .....		
24.08 Derivatives .....		
24.09 Payable for securities .....		
24.10 Payable for securities lending .....		
24.11 Capital notes \$ ..... and interest thereon \$ .....		
25. Aggregate write-ins for liabilities .....	253,837	394,330
26. Total liabilities excluding Separate Accounts business (Lines 1 to 25) .....	238,139,194	218,778,416
27. From Separate Accounts Statement .....	4,889,383,145	4,858,831,848
28. Total liabilities (Lines 26 and 27) .....	5,127,522,339	5,077,610,264
29. Common capital stock .....	2,500,200	2,500,200
30. Preferred capital stock .....		
31. Aggregate write-ins for other than special surplus funds .....		
32. Surplus notes .....		
33. Gross paid in and contributed surplus .....	143,736,914	143,736,914
34. Aggregate write-ins for special surplus funds .....		
35. Unassigned funds (surplus) .....	145,229,609	128,272,412
36. Less treasury stock, at cost:		
36.1 ..... shares common (value included in Line 29 \$ ..... ) .....		
36.2 ..... shares preferred (value included in Line 30 \$ ..... ) .....		
37. Surplus (Total Lines 31+32+33+34+35-36) (including \$ ..... in Separate Accounts Statement) .....	288,966,523	272,009,326
38. Totals of Lines 29, 30 and 37 .....	291,466,723	274,509,526
39. Totals of Lines 28 and 38 (Page 2, Line 28, Col. 3) .....	5,418,989,062	5,352,119,790
<b>DETAILS OF WRITE-INS</b>		
2501. Miscellaneous liabilities .....	134,287	193,420
2502. Funds awaiting escheat .....	119,550	200,910
2503. ....		
2598. Summary of remaining write-ins for Line 25 from overflow page .....		
2599. Totals (Lines 2501 through 2503 plus 2598)(Line 25 above) .....	253,837	394,330
3101. ....		
3102. ....		
3103. ....		
3198. Summary of remaining write-ins for Line 31 from overflow page .....		
3199. Totals (Lines 3101 through 3103 plus 3198)(Line 31 above) .....		
3401. ....		
3402. ....		
3403. ....		
3498. Summary of remaining write-ins for Line 34 from overflow page .....		
3499. Totals (Lines 3401 through 3403 plus 3498)(Line 34 above) .....		

## STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SUMMARY OF OPERATIONS**

	1 Current Year To Date	2 Prior Year To Date	3 Prior Year Ended December 31
1. Premiums and annuity considerations for life and accident and health contracts	9,806,614	(1,792,122)	(4,338,246)
2. Considerations for supplementary contracts with life contingencies	171,646	3,860	3,860
3. Net investment income	9,765,113	11,699,683	15,179,564
4. Amortization of Interest Maintenance Reserve (IMR)	200,196	151,630	173,503
5. Separate Accounts net gain from operations excluding unrealized gains or losses			
6. Commissions and expense allowances on reinsurance ceded	7,792,792	7,661,606	10,226,565
7. Reserve adjustments on reinsurance ceded	(64,693,213)	(55,591,992)	(70,012,768)
8. Miscellaneous Income:			
8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts	57,247,644	57,572,994	67,246,889
8.2 Charges and fees for deposit-type contracts			
8.3 Aggregate write-ins for miscellaneous income	34,540	(68,498)	(886,736)
9. Totals (Lines 1 to 8.3)	20,325,332	19,637,160	17,592,631
10. Death benefits	58,801,395	31,259,639	38,973,328
11. Matured endowments (excluding guaranteed annual pure endowments)			
12. Annuity benefits	1,027,650	1,274,111	1,838,913
13. Disability benefits and benefits under accident and health contracts	292,232	266,014	353,305
14. Coupons, guaranteed annual pure endowments and similar benefits			
15. Surrender benefits and withdrawals for life contracts	2,994,603	2,440,016	3,793,836
16. Group conversions			
17. Interest and adjustments on contract or deposit-type contract funds	871,378	1,062,519	1,420,055
18. Payments on supplementary contracts with life contingencies	29,430	31,084	39,899
19. Increase in aggregate reserves for life and accident and health contracts	(415,186)	(420,510)	(2,201,567)
20. Totals (Lines 10 to 19)	63,601,502	35,912,873	44,217,769
21. Commissions on premiums, annuity considerations, and deposit-type contract funds (direct business only)	1,467,281	1,558,680	2,045,004
22. Commissions and expense allowances on reinsurance assumed			
23. General insurance expenses and fraternal expenses	3,933,987	6,491,144	8,547,919
24. Insurance taxes, licenses and fees, excluding federal income taxes	646,967	566,270	735,043
25. Increase in loading on deferred and uncollected premiums	(9,474)	(1,904)	56
26. Net transfers to or (from) Separate Accounts net of reinsurance	(69,141,504)	(35,925,811)	(49,934,367)
27. Aggregate write-ins for deductions	(1,365,650)	(1,207,925)	(1,550,537)
28. Totals (Lines 20 to 27)	(866,892)	7,393,327	4,060,886
29. Net gain from operations before dividends to policyholders and federal income taxes (Line 9 minus Line 28)	21,192,223	12,243,834	13,531,746
30. Dividends to policyholders and refunds to members			
31. Net gain from operations after dividends to policyholders, refunds to members and before federal income taxes (Line 29 minus Line 30)	21,192,223	12,243,834	13,531,746
32. Federal and foreign income taxes incurred (excluding tax on capital gains)	2,793,147	1,060,014	1,012,978
33. Net gain from operations after dividends to policyholders, refunds to members and federal income taxes and before realized capital gains or (losses) (Line 31 minus Line 32)	18,399,076	11,183,820	12,518,768
34. Net realized capital gains (losses) (excluding gains (losses) transferred to the IMR) less capital gains tax of \$ 40,217 (excluding taxes of \$ 159,868 transferred to the IMR)	(48,323)	(132,517)	(133,507)
35. Net income (Line 33 plus Line 34)	18,350,754	11,051,303	12,385,260
<b>CAPITAL AND SURPLUS ACCOUNT</b>			
36. Capital and surplus, December 31, prior year	274,509,526	293,454,322	293,454,322
37. Net income (Line 35)	18,350,754	11,051,303	12,385,260
38. Change in net unrealized capital gains (losses) less capital gains tax of \$ (24,479)	(92,087)	(80,186)	(140,180)
39. Change in net unrealized foreign exchange capital gain (loss)			
40. Change in net deferred income tax	(616,441)	(178,150)	(256,559)
41. Change in nonadmitted assets	365,596	167,661	84,989
42. Change in liability for reinsurance in unauthorized and certified companies			
43. Change in reserve on account of change in valuation basis, (increase) or decrease			600,000
44. Change in asset valuation reserve	156,444	24,533	(907,693)
45. Change in treasury stock			
46. Surplus (contributed to) withdrawn from Separate Accounts during period			
47. Other changes in surplus in Separate Accounts Statement			
48. Change in surplus notes			
49. Cumulative effect of changes in accounting principles			
50. Capital changes:			
50.1 Paid in			
50.2 Transferred from surplus (Stock Dividend)			
50.3 Transferred to surplus			
51. Surplus adjustment:			
51.1 Paid in			
51.2 Transferred to capital (Stock Dividend)			
51.3 Transferred from capital			
51.4 Change in surplus as a result of reinsurance			
52. Dividends to stockholders			(29,000,000)
53. Aggregate write-ins for gains and losses in surplus	(1,207,071)	(1,282,960)	(1,710,613)
54. Net change in capital and surplus for the year (Lines 37 through 53)	16,957,197	9,702,201	(18,944,796)
55. Capital and surplus, as of statement date (Lines 36 + 54)	291,466,723	303,156,523	274,509,526
<b>DETAILS OF WRITE-INS</b>			
08.301. Management and administrative fees	(1,347,677)	(1,256,922)	(1,684,923)
08.302. Revenue sharing	821,924	731,423	972,717
08.303. Miscellaneous	560,293	457,000	(174,530)
08.398. Summary of remaining write-ins for Line 8.3 from overflow page			
08.399. Totals (Lines 08.301 through 08.303 plus 08.398) (Line 8.3 above)	34,540	(68,498)	(886,736)
2701. Reinsurance ceded adjustment	(1,207,071)	(1,282,960)	(1,710,613)
2702. Miscellaneous charges to operations	(158,579)	75,035	160,076
2703. ....			
2798. Summary of remaining write-ins for Line 27 from overflow page			
2799. Totals (Lines 2701 through 2703 plus 2798)(Line 27 above)	(1,365,650)	(1,207,925)	(1,550,537)
5301. Reinsurance ceded adjustment	(1,207,071)	(1,282,960)	(1,710,613)
5302. ....			
5303. ....			
5398. Summary of remaining write-ins for Line 53 from overflow page			
5399. Totals (Lines 5301 through 5303 plus 5398)(Line 53 above)	(1,207,071)	(1,282,960)	(1,710,613)

## STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**CASH FLOW**

	1 Current Year To Date	2 Prior Year To Date	3 Prior Year Ended December 31
<b>Cash from Operations</b>			
1. Premiums collected net of reinsurance .....	3,437,210	440,592	820,981
2. Net investment income .....	9,269,048	11,455,411	15,788,731
3. Miscellaneous income .....	15,187,006	8,499,842	(4,994,848)
4. Total (Lines 1 to 3) .....	27,893,264	20,395,845	11,614,864
5. Benefit and loss related payments .....	71,035,361	38,325,429	52,146,733
6. Net transfers to Separate Accounts, Segregated Accounts and Protected Cell Accounts .....	(74,609,073)	(46,626,704)	(61,647,092)
7. Commissions, expenses paid and aggregate write-ins for deductions .....	4,080,261	9,147,599	12,218,371
8. Dividends paid to policyholders .....			
9. Federal and foreign income taxes paid (recovered) net of \$ ..... (304,069) tax on capital gains (losses) .....	3,452,969	1,878,313	725,317
10. Total (Lines 5 through 9) .....	3,959,518	2,724,637	3,443,329
11. Net cash from operations (Line 4 minus Line 10) .....	23,933,746	17,671,209	8,171,535
<b>Cash from Investments</b>			
12. Proceeds from investments sold, matured or repaid:			
12.1 Bonds .....	27,374,060	70,685,275	76,001,682
12.2 Stocks .....			
12.3 Mortgage loans .....	229,112	193,452	262,098
12.4 Real estate .....			
12.5 Other invested assets .....			
12.6 Net gains or (losses) on cash, cash equivalents and short-term investments .....	116	2,631	7,570
12.7 Miscellaneous proceeds .....	(3,208,556)	(631,968)	
12.8 Total investment proceeds (Lines 12.1 to 12.7) .....	24,394,732	70,249,390	76,271,350
13. Cost of investments acquired (long-term only):			
13.1 Bonds .....	4,399,846	12,500,339	12,522,067
13.2 Stocks .....			
13.3 Mortgage loans .....	609	951	951
13.4 Real estate .....			
13.5 Other invested assets .....			
13.6 Miscellaneous applications .....			
13.7 Total investments acquired (Lines 13.1 to 13.6) .....	4,400,455	12,501,290	12,523,018
14. Net increase (or decrease) in contract loans and premium notes .....	(1,586,800)	(2,177,151)	(4,025,405)
15. Net cash from investments (Line 12.8 minus Line 13.7 and Line 14) .....	21,581,077	59,925,251	67,773,737
<b>Cash from Financing and Miscellaneous Sources</b>			
16. Cash provided (applied):			
16.1 Surplus notes, capital notes .....			
16.2 Capital and paid in surplus, less treasury stock .....			
16.3 Borrowed funds .....			
16.4 Net deposits on deposit-type contracts and other insurance liabilities .....	1,332,796	(2,215,399)	(3,414,901)
16.5 Dividends to stockholders .....			29,000,000
16.6 Other cash provided (applied) .....	256,043	820,248	(386,834)
17. Net cash from financing and miscellaneous sources (Line 16.1 through Line 16.4 minus Line 16.5 plus Line 16.6) .....	1,588,839	(1,395,151)	(32,801,735)
<b>RECONCILIATION OF CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS</b>			
18. Net change in cash, cash equivalents and short-term investments (Line 11, plus Lines 15 and 17) .....	47,103,662	76,201,309	43,143,537
19. Cash, cash equivalents and short-term investments:			
19.1 Beginning of year .....	103,615,595	60,472,058	60,472,058
19.2 End of period (Line 18 plus Line 19.1) .....	150,719,257	136,673,367	103,615,595
<b>Note: Supplemental disclosures of cash flow information for non-cash transactions:</b>			
20.0001. Bond conversions and refinancing .....	581,403	973,252	1,749,327
20.0002. Stock conversions .....	4,641		
20.0003. Net investment income in-kind bonds .....		302,329	

**EXHIBIT 1**

**DIRECT PREMIUMS AND DEPOSIT-TYPE CONTRACTS**

	1 Current Year To Date	2 Prior Year To Date	3 Prior Year Ended December 31
1. Industrial life .....			
2. Ordinary life insurance .....	30,533,467	19,508,199	23,966,435
3. Ordinary individual annuities .....	14,800	15,152	19,952
4. Credit life (group and individual) .....			
5. Group life insurance .....	(6,353,097)	(7,576,187)	731,301
6. Group annuities .....			
7. A & H - group .....			
8. A & H - credit (group and individual) .....			
9. A & H - other .....			
10. Aggregate of all other lines of business .....			
11. Subtotal (Lines 1 through 10) .....	24,195,170	11,947,164	24,717,688
12. Fraternal (Fraternal Benefit Societies Only) .....			
13. Subtotal (Lines 11 through 12) .....	24,195,170	11,947,164	24,717,688
14. Deposit-type contracts .....			
15. Total (Lines 13 and 14)	24,195,170	11,947,164	24,717,688
DETAILS OF WRITE-INS			
1001. ....			
1002. ....			
1003. ....			
1098. Summary of remaining write-ins for Line 10 from overflow page .....			
1099. Totals (Lines 1001 through 1003 plus 1098)(Line 10 above)			

## NOTES TO FINANCIAL STATEMENTS

### TABLE OF CONTENTS

<b>Note 1 – Summary of Significant Accounting Policies and Going Concern</b>
<b>Note 2 – Accounting Changes and Corrections of Errors</b>
<b>Note 3 – Business Combinations and Goodwill</b>
<b>Note 4 – Discontinued Operations</b>
<b>Note 5 – Investments</b>
<b>Note 6 – Joint Ventures, Partnerships and Limited Liability Companies</b>
<b>Note 7 – Investment Income</b>
<b>Note 8 – Derivative Instruments</b>
<b>Note 9 – Income Taxes</b>
<b>Note 10 – Information Concerning Parent, Subsidiaries and Affiliates</b>
<b>Note 11 – Debt</b>
<b>Note 12 – Retirement Plans, Deferred Compensation, Postemployment Benefits and Compensated Absences and Other Postretirement Benefit Plans</b>
<b>Note 13 – Capital and Surplus, Dividend Restrictions and Quasi-Reorganizations</b>
<b>Note 14 – Liabilities, Contingencies and Assessments</b>
<b>Note 15 – Leases</b>
<b>Note 16 – Information About Financial Instruments With Off-Balance Sheet Risk and Financial Instruments With Concentrations of Credit Risk</b>
<b>Note 17 – Sale, Transfer and Servicing of Financial Assets and Extinguishments of Liabilities</b>
<b>Note 18 – Gain or Loss to the Reporting Entity from Uninsured Plans and the Uninsured Portion of Partially Insured Plans</b>
<b>Note 19 – Direct Premium Written/Produced by Managing General Agents/Third Party Administrators</b>
<b>Note 20 – Fair Value Measurements</b>
<b>Note 21 – Other Items</b>
<b>Note 22 – Events Subsequent</b>
<b>Note 23 – Reinsurance</b>
<b>Note 24 – Retrospectively Rated Contracts and Contracts Subject to Redetermination</b>
<b>Note 25 – Change in Incurred Losses and Loss Adjustment Expenses</b>
<b>Note 26 – Intercompany Pooling Arrangements</b>
<b>Note 27 – Structured Settlements</b>
<b>Note 28 – Health Care Receivables</b>
<b>Note 29 – Participating Policies</b>
<b>Note 30 – Premium Deficiency Reserves</b>
<b>Note 31 – Reserves for Life Contracts and Annuity Contracts</b>
<b>Note 32 – Analysis of Annuity Actuarial Reserves and Deposit Type Liabilities by Withdrawal Characteristics</b>
<b>Note 33 – Analysis of Life Actuarial Reserves by Withdrawal Characteristics</b>
<b>Note 34 – Premium and Annuity Considerations Deferred and Uncollected</b>
<b>Note 35 – Separate Accounts</b>
<b>Note 36 – Loss/Claim Adjustment Expenses</b>

## NOTES TO FINANCIAL STATEMENTS

### Note 1 – Summary of Significant Accounting Policies and Going Concern

a. Accounting practices:

The accompanying financial statements of MML Bay State Life Insurance Company (the Company) have been prepared in conformity with the Statutory Accounting Practices (SAP) of the National Association of Insurance Commissioners (NAIC) and the accounting practices prescribed or permitted by the State of Connecticut Insurance Department.

A reconciliation of the Company's net income and capital and surplus between NAIC SAP and practices prescribed and permitted by the State of Connecticut is shown below:

	SSAP #	F/S Page	F/S Line	2021	2020
<b>NET INCOME</b>					
(1) State basis (Page 4, Line 35, Columns 1 & 3)	XXX	XXX	XXX	\$ 18,350,754	\$ 12,385,260
(2) State prescribed practices that increase/(decrease) NAIC	N/A	N/A	N/A	-	-
(3) State permitted practices that increase/(decrease) NAIC	N/A	N/A	N/A	-	-
(4) NAIC SAP (1-2-3=4)	XXX	XXX	XXX	<u>\$ 18,350,754</u>	<u>\$ 12,385,260</u>
<b>SURPLUS</b>					
(5) State basis (Page 3, Line 38, Columns 1 & 2)	XXX	XXX	XXX	\$ 291,466,723	\$ 274,509,526
(6) State prescribed practices that increase/(decrease) NAIC	N/A	N/A	N/A	-	-
(7) State permitted practices that increase/(decrease) NAIC	N/A	N/A	N/A	-	-
(8) NAIC SAP (5-6-7=8)	XXX	XXX	XXX	<u>\$ 291,466,723</u>	<u>\$ 274,509,526</u>

b. Use of estimates in the preparation of the financial statements - No change

c. Accounting policy:

(1) No change

(2) Bonds are generally valued at amortized cost using the constant yield interest method with the exception of NAIC Category 6 bonds, which are in or near default, and certain residential mortgage-backed securities (RMBS) and commercial mortgage-backed securities (CMBS), which are rated by outside modelers, which are carried at the lower of amortized cost or fair value. NAIC ratings are applied to bonds and other securities. Categories 1 and 2 are considered investment grade, while Categories 3 through 6 are considered below investment grade. Bond transactions are recorded on a trade date basis, except for private placement bonds, which are recorded on the funding date.

The fair value of bonds is based on quoted market prices when available. If quoted market prices are not available, values provided by other third-party organizations are used. If values provided by other third-party organizations are unavailable, fair value is estimated using internal models by discounting expected future cash flows using observable current market rates applicable to yield, credit quality and maturity of the investment or using quoted market values for comparable investments. Internal inputs used in the determination of fair value include estimated prepayment speeds, default rates, discount rates and collateral values, among others. Structure characteristics and cash flow priority are also considered. Fair values resulting from internal models are those expected to be received in an orderly transaction between willing market participants.

(3-5) No change

(6) For loan-backed and structured securities, such as asset-backed securities, mortgage-backed securities, including RMBS and CMBS, and structured securities, including collateralized debt obligations, amortization or accretion is revalued quarterly based on the current estimated cash flows, using either the prospective or retrospective adjustment methodologies.

Certain fixed income securities with the highest ratings from a rating agency follow the retrospective method of accounting. Under the retrospective method, the recalculated effective yield equates the present value of the actual and anticipated cash flows, including new prepayment assumptions, to the original cost of the investment. Prepayment assumptions are based on borrower constraints and economic incentives such as the original term, age and coupon of the loan as affected by the interest rate environment. The current carrying value is then increased or decreased to the amount that would have resulted had the revised yield been applied since inception, and investment income is correspondingly decreased or increased.

All other fixed income securities, such as floating rate bonds and interest only securities, including those that have been impaired, follow the prospective method of accounting. Under the prospective method, the recalculated future effective yield equates the carrying value of the investment to the present value of the anticipated future cash flows.

(7-14) No change

d. Going concern:

There is not substantial doubt regarding the Company's ability to continue as a going concern.

### Note 2 – Accounting Changes and Corrections of Errors

a. For the nine months ended September 30, 2021 and 2020, the Company did not record any corrections of prior years' errors.

b. Adoption of new accounting standards

In July 2020, the NAIC adopted modifications to Statements of Statutory Accounting Principles (SSAP) No. 26R, Bonds, effective January 1, 2021. The modifications apply similar reporting for gains or losses due to a tender offer as previously adopted for calls. The difference between consideration and par is recognized as net investment income, while any difference between book value and par is recognized as realized gain or loss. The modifications did not have a material effect on the Company's financial statements.

In March 2021, the NAIC adopted modifications to SSAP No. 26R, Bonds, effective January 1, 2021. The modifications expand the called bond disclosures to also include bonds terminated early through a tender offer. The modifications did not have a material effect on the Company's financial statements.

In March 2021, the NAIC adopted modifications to SSAP No. 26R, Bonds, effective January 1, 2021. The modifications clarify that perpetual bonds are within scope. Perpetual bonds shall be reported at fair value regardless of NAIC designation, not to exceed any current effective call price. For perpetual bonds with an effective call option, any applicable premium shall be amortized to the next effective call date. For perpetual bonds purchased at a discount, any applicable discount shall be accreted utilizing the yield-to-worst concept. The modifications did not have a material effect on the Company's financial statements.



## NOTES TO FINANCIAL STATEMENTS

**Note 3 – Business Combinations and Goodwill** - No change**Note 4 – Discontinued Operations** - No change**Note 5 – Investments**

a. Mortgage loans, including mezzanine real estate loans - No change

b. Debt restructuring - No change

c. Reverse mortgages - No change

d. Loan-backed securities:

(1) Prepayment assumptions for loan-backed and structured securities are based on various assumptions and inputs obtained from external industry sources along with internal analysis and actual experience.

(2) The following contains loan-backed and structured securities that recognized other-than-temporary impairments (OTTI) classified on the following bases for recognizing OTTI:

(1) Amortized Cost Basis Before OTTI	(2) OTTI Recognized in Loss		(3) Fair Value 1-(2a+2b)
	(2a) Interest	(2b) Non-interest	

OTTI recognized in the first quarter

a. Intent to sell	\$	-	\$	-	\$	-
b. Inability or lack of intent to retain the investment in the security for a period of time sufficient to recover the amortized cost basis		93,988		-	3,976	90,012
c. Total first quarter	<u>\$</u>	<u>93,988</u>	<u>\$</u>	<u>-</u>	<u>\$</u>	<u>90,012</u>

OTTI recognized in the second quarter

d. Intent to sell	\$	-	\$	-	\$	-
e. Inability or lack of intent to retain the investment in the security for a period of time sufficient to recover the amortized cost basis		152,001		-	4,129	147,872
f. Total second quarter	<u>\$</u>	<u>152,001</u>	<u>\$</u>	<u>-</u>	<u>\$</u>	<u>147,872</u>

OTTI recognized in the third quarter

g. Intent to sell	\$	-	\$	-	\$	-
h. Inability or lack of intent to retain the investment in the security for a period of time sufficient to recover the amortized cost basis		-		-	-	-
i. Total third quarter	<u>\$</u>	<u>-</u>	<u>\$</u>	<u>-</u>	<u>\$</u>	<u>-</u>

OTTI recognized in the fourth quarter

j. Intent to sell	\$	-	\$	-	\$	-
k. Inability or lack of intent to retain the investment in the security for a period of time sufficient to recover the amortized cost basis		-		-	-	-
l. Total fourth quarter	<u>\$</u>	<u>-</u>	<u>\$</u>	<u>-</u>	<u>\$</u>	<u>-</u>

m. Annual aggregate total

\$ -    \$ 8,105

All impairments were taken due to the present value of cash flows expected to be collected being less than the amortized cost basis.

(3) The Company did not recognize impaired structured securities where the present value of cash flows expected to be collected is less than the amortized cost basis.

CUSIP	Amortized Cost before OTTI	Projected Cash Flow	Recognized OTTI	Amortized Cost after OTTI	Fair Value at Time of OTTI	Date of Financial Instrument Where Reported
61750FAE0	\$ 93,988	\$ 90,012	\$ (3,976)	\$ 90,012	\$ 80,737	March 31, 2021
40431KAE0	62,425	61,595	(830)	61,595	72,006	June 30, 2021
61750FAE0	89,576	86,277	(3,299)	86,277	79,659	June 30, 2021
Totals	<u>\$ 245,989</u>	<u>\$ 237,884</u>	<u>\$ (8,105)</u>	<u>\$ 237,884</u>	<u>\$ 232,402</u>	

## NOTES TO FINANCIAL STATEMENTS

(4) As of September 30, 2021, the gross unrealized losses and fair values for investments in structured and loan-backed securities for which an OTTI has not been recognized in earnings follow:

a.	The aggregate amount of unrealized losses:		
	1. Less than 12 months	\$	(233,857)
	2. 12 months or longer	\$	(297,980)
b.	The aggregate related fair value of securities with unrealized losses:		
	1. Less than 12 months	\$	2,631,769
	2. 12 months or longer	\$	1,416,175

(5) No change

e. Dollar repurchase agreements and/or securities lending transactions: The Company did not have any dollar repurchase agreements and/or securities lending transactions as of September 30, 2021.

f. Repurchase agreements transactions accounted for as secured borrowing:  
(1) The Company did not have any repurchase agreements as of September 30, 2021.

g. Reverse repurchase agreements transactions accounted for as secured borrowing: The Company did not have any reverse repurchase agreements transactions accounted for as secured borrowing as of September 30, 2021.

h. Repurchase agreements transactions accounted for as a sale: The Company did not have any repurchase agreements transactions accounted for as a sale as of September 30, 2021.

i. Reverse repurchase agreements transactions accounted for as a sale: The Company did not have any reverse repurchase agreements transactions accounted for as a sale as of September 30, 2021.

j. Real estate - No change

k. Low-income housing tax credit - No change

l. Restricted assets - No change

m. Working capital finance investments: The Company did not invest in working capital finance investments as of September 30, 2021.

n. Offsetting and netting of assets and liabilities: The Company does not currently hold derivatives, repurchase agreements, reverse repurchase agreements or securities lending assets and liabilities as of September 30, 2021.

o. 5GI Securities:

Investment	Number of 5GI Securities		Aggregate BACV		Aggregate Fair Value	
	Current Year	Prior Year	Current Year	Prior Year	Current Year	Prior Year
(1) Bonds - AC	-	1	\$-	\$26,677	\$-	\$26,610
(2) LB&SS - AC	-	-	-	-	-	-
(3) Preferred Stock - AC	-	-	-	-	-	-
(4) Preferred Stock - FV	-	-	-	-	-	-
(5) Total (1+2+3+4)	-	1	\$-	\$26,677	\$-	\$26,610

AC - Amortized Cost FV - Fair Value

p. Short sales - The Company does not engage in short sale transactions.

q. Prepayment penalty and acceleration fees:

	Nine Months Ended September 30, 2021	
	General Account	Separate Account
1. Number of CUSIPS	1	17
2. Aggregate amount of investment income	\$ 2,645	\$ 430,886

r. Reporting entity's share of cash pool by asset type:

Asset Type	Percent Share
(1) Cash	- %
(2) Cash equivalents	63 %
(3) Short-term investments	37 %
(4) Total	100 %

**Note 6 – Joint Ventures, Partnerships and Limited Liability Companies** - No change

**Note 7 – Investment Income** – No change

**Note 8 – Derivative Instruments**

The Company did not have any derivative instruments for the nine months ended September 30, 2021.

**Note 9 – Income Taxes** – No change

**Note 10 – Information Concerning Parent, Subsidiaries and Affiliates** - No change

**Note 11 – Debt**

a. No change

## NOTES TO FINANCIAL STATEMENTS

- b. The Company is not a member of the Federal Home Loan Bank (FHLB) therefore it has no FHLB funding agreements.

### **Note 12 – Retirement Plans, Deferred Compensation, Postemployment Benefits and Compensated Absences and Other Postretirement Benefit Plans**

- a. Defined Benefit Plan:

(1-3) No change

(4) The Company did not have any defined benefit pension plans for which the reporting entity is directly liable.

(5-21) No change

- b-i. No change

### **Note 13 – Capital and Surplus, Dividend Restrictions and Quasi-Reorganizations**

(1-3) No change

### **Note 14 – Liabilities, Contingencies and Assessments**

- a. Contingent commitments - No change

- b. Assessments - No change

- c. Gain contingencies - No change

- d. Claims related to extra contractual obligations - No change

- e. Joint and several liabilities – No change

- f. All other contingencies:

In the normal course of business, the Company is involved in disputes, litigation and governmental or regulatory inquiries, administrative proceedings, examinations and investigations, both pending and threatened. These matters, if resolved adversely against the Company or settled, may result in monetary damages, fines and penalties or require changes in the Company's business practices. The resolution or settlement of these matters is inherently difficult to predict. Based upon the Company's assessment of these pending matters, the Company does not believe that the amount of any judgment, settlement or other action arising from any pending matter is likely to have a material adverse effect on the statement of financial position. However, an adverse outcome in certain matters could have a material adverse effect on the results of operations for the period in which such matter is resolved, or an accrual is determined to be required, on the financial statement financial position, or on our reputation.

The Company evaluates the need for accruals of loss contingencies for each matter. When a liability for a matter is probable and can be estimated, the Company accrues an estimate of the loss and any related insurance recoveries, if any. An accrual is subject to subsequent adjustment as a result of additional information and other developments. The resolution of matters are inherently difficult to predict, especially in the early stages of matter. Even if a loss is probable, due to many complex factors, such as speed of discovery and the timing of court decisions or rulings, a loss or range of loss may not be reasonably estimated until the later stages of the matter. For matters where a loss is material and it is either probable or reasonably possible then it is disclosed. For matters where a loss may be reasonably possible, but not probable, or is probable but not reasonably estimated, no accrual is established, but the matter, if material, is disclosed.

### **Note 15 – Leases** - No change

### **Note 16 – Information About Financial Instruments With Off-Balance Sheet Risk and Financial Instruments With Concentrations of Credit Risk** - No change

### **Note 17 – Sale, Transfer and Servicing of Financial Assets and Extinguishments of Liabilities**

- a. Transfers of receivables reported as sales - No change

- b. Transfer and servicing of financial assets:

(1) No change

(2) The Company did not have any servicing assets or liabilities in 2021 or 2020.

(3) No change

(4) The Company did not have interests that continue to be held by a transferor in securitized financial assets in 2021 or 2020.

(5-7) No change

- c. Wash sales:

(1) In the course of the Company's investment management activities, securities may be sold and reacquired within 30 days to enhance the Company's yield on its investment portfolio.

(2) The Company did not sell any securities with the NAIC Designation 3 or below, or unrated, through the nine months ended September 30, 2021 that were reacquired within 30 days of the sale date.

### **Note 18 – Gain or Loss to the Reporting Entity from Uninsured Plans and the Uninsured Portion of Partially Insured Plans** - No change

### **Note 19 – Direct Premium Written/Produced by Managing General Agents/Third Party Administrators** - No change

### **Note 20 – Fair Value Measurements**

- a. Fair value is defined as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The authoritative guidance around fair value establishes a measurement framework that includes a hierarchy used to classify the inputs used in measuring fair value. The hierarchy prioritizes the inputs to valuation techniques into three levels. Each level reflects a unique description of the inputs that are significant to the fair value measurements. The levels of the fair value hierarchy are as follows:

Level 1 – Observable inputs in the form of quoted prices for identical instruments in active markets.

## NOTES TO FINANCIAL STATEMENTS

Level 2 – Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active or other inputs that are observable or can be derived from observable market data for substantially the full term of the assets or liabilities.

Level 3 – One or more unobservable inputs that are supported by little or no market activity and are significant to the fair value of the assets or liabilities. Level 3 assets and liabilities include financial instruments whose value is determined using internal models, as well as instruments for which the determination of fair value requires significant management judgment or estimation.

When available, the Company generally uses unadjusted quoted market prices from independent sources to determine the fair value of investments, and classifies such items within Level 1 of the fair value hierarchy. If quoted prices are not available, prices are derived from observable market data for similar assets in an active market or obtained directly from brokers for identical assets traded in inactive markets. Investments that are priced using these inputs are classified within Level 2 of the fair value hierarchy. When some of the necessary observable inputs are unavailable, fair value is based upon internally developed models. These models use inputs not directly observable or correlated with observable market data. Typical inputs, which are integrated in the Company's internal discounted cash flow models and discounted earnings models include, but are not limited to, issuer spreads derived from internal credit ratings and benchmark yields such as the LIBOR, cash flow estimates and earnings before interest, taxes, depreciation and amortization estimates. Investments that are priced with such unobservable inputs are classified within Level 3 of the fair value hierarchy.

The Company has established and maintains policies and guidelines that govern its valuation methodologies and their consistent application. These policies and guidelines address the use of inputs, price source hierarchies and provide controls around the valuation processes. These controls include appropriate review and analysis of prices against market activity or indicators for reasonableness, approval of price source changes, price overrides, methodology changes and classification of fair value hierarchy levels. The valuation policies and guidelines are reviewed and updated as appropriate.

Annually, the Company reviews the primary pricing vendor to validate that the inputs used in that vendor's pricing process are deemed to be market observable as defined above. While the Company was not provided access to proprietary models of the vendor, the reviews have included on-site walk-throughs of the pricing process, methodologies and control procedures for each asset class and level for which prices are provided. The review also included an examination of the underlying inputs and assumptions for a sample of individual securities across asset classes. In addition, the Company and its pricing vendors have an established challenge process in place for all security valuations, which facilitates identification and resolution of prices that fall outside expected ranges. The Company believes that the prices received from the pricing vendors are representative of prices that would be received to sell the assets at the applicable measurement date (exit prices) and are classified appropriately in the hierarchy.

The fair value of individual annuity and supplementary contracts is determined using one of several methods based on the specific contract type. For short-term contracts, generally less than 30 days, the fair value is assumed to be the book value. For investment-type contracts, the fair value is determined by calculating the present value of future cash flows discounted at current market interest rates, the risk-free rate or a current pricing yield curve based on pricing assumptions using assets of a comparable corporate bond quality. Annuities are valued using cash flow projections from the Company's asset-liability management analysis.

- (1) The following presents the Company's fair value hierarchy for assets and liabilities that are carried at fair value:

	September 30, 2021				
	Level 1	Level 2	Level 3	Net Asset Value (NAV)	Total
Financial assets:					
Bonds:					
Industrial and miscellaneous	\$ -	\$ 601,815	\$ -	\$ -	\$ 601,815
Common stock - unaffiliated	11,685	-	-	-	11,685
Separate account assets <sup>(1)</sup>	1,296,884,983	2,401,582,327	-	-	3,698,467,310
Total financial assets carried at fair value	\$ 1,296,896,668	\$ 2,402,184,142	\$ -	\$ -	\$ 3,699,080,810

<sup>(1)</sup>\$1,190,915,835 of book value separate account assets are not carried at fair value and, therefore, are not included in this table.

For the period ended September 30, 2021, there were no significant transfers between Level 1 and Level 2 and the Company does not have any financial instruments that are carried at NAV as a practical expedient.

	December 31, 2020				
	Level 1	Level 2	Level 3	Net Asset Value (NAV)	Total
Financial assets:					
Bonds:					
Industrial and miscellaneous	\$ -	\$ 1,028,347	\$ -	\$ -	\$ 1,028,347
Separate account assets <sup>(1)</sup>	1,195,556,830	2,480,098,682	-	-	3,675,655,512
Total financial assets carried at fair value	\$ 1,195,556,830	\$ 2,481,127,029	\$ -	\$ -	\$ 3,676,683,859

<sup>(1)</sup>\$1,183,176,336 of book value separate account assets are not carried at fair value and, therefore, are not included in this table.

- (2) The Company does not have any level 3 financial instruments that are carried at fair value
- (3) The Company reviews the fair value hierarchy classifications at each reporting period. Overall, reclassifications between levels occur when there are changes in the observability of inputs and market activity used in the valuation of a financial asset or liability. Such reclassifications are reported as transfers between levels at the beginning fair value for the reporting period in which the changes occur. Given the types of assets classified as Level 1 (primarily equity securities and mutual fund investments), transfers between Level 1 and Level 2 measurement categories are expected to be infrequent. Transfers into and out of Level 3 are summarized in the schedule of changes in Level 3 assets and liabilities.

## NOTES TO FINANCIAL STATEMENTS

### (4) Valuation Techniques and Inputs

The Company determines the fair value of its investments using primarily the market approach or the income approach. The use of quoted prices for identical assets and matrix pricing or other similar techniques are examples of market approaches, while the use of discounted cash flow methodologies is an example of the income approach. The Company attempts to maximize the use of observable inputs and minimize the use of unobservable inputs in selecting whether the market or the income approach is used.

A description of the significant valuation techniques and inputs to the determination of estimated fair value for the more significant asset and liability classes measured at fair value on a recurring basis and categorized within Level 2 and Level 3 of the fair value hierarchy is as follows:

**Separate account assets** - These assets primarily include bonds (industrial and miscellaneous; U.S. government and agencies) and derivatives. Their fair values are determined as follows:

**Bonds (Industrial and miscellaneous)** - These securities are principally valued using the market or the income approaches. Level 2 valuations are based primarily on quoted prices in markets that are not active, broker quotes, matrix pricing or other similar techniques that use standard market observable inputs such as benchmark yields, spreads versus benchmark yields, new issuances, issuer ratings, duration, and trades of identical or comparable securities. Privately placed securities are valued using discounted cash flow models using standard market observable inputs, and inputs derived from, or corroborated by, market observable data including market yield curve, duration, call provisions, observable prices and spreads for similar publicly traded or privately traded issuances that incorporate the credit quality and industry sector of the issuer. This level also includes securities priced by independent pricing services that use observable inputs. Valuations based on matrix pricing or other similar techniques that utilize significant unobservable inputs or inputs that cannot be derived principally from, or corroborated by, observable market data, including adjustments for illiquidity, delta spread adjustments or spreads to reflect industry trends or specific credit-related issues are classified as Level 3. In addition, inputs including quoted prices for identical or similar securities that are less liquid and based on lower levels of trading activity than securities classified in Level 2 are classified as Level 3.

**Bonds (U.S. government and agencies)** - These securities are principally valued using the market approach. Level 2 valuations are based primarily on quoted prices in markets that are not active or using matrix pricing or other similar techniques using standard market observable inputs such as the benchmark U.S. Treasury yield curve, the spreads versus the U.S. Treasury yield curve for the identical security and comparable securities that are actively traded.

The use of different assumptions or valuation methodologies may have a material impact on the estimated fair value amounts. For the periods presented, there were no significant changes to the Company's valuation techniques.

(5) Derivative assets and liabilities fair value disclosures on a gross basis are included in paragraph 1 above. Since there are no derivative assets or liabilities classified in Level 3, the reconciliation disclosures required under paragraphs 2 through 4 are not applicable.

b. The Company provides additional fair value information in Note 21 – Other Items.

c. The following presents a summary of the carrying values and fair values of the Company's financial instruments:

	September 30, 2021						Net Asset Value (NAV)	Not Practicable (Carrying Value)
	Aggregate Fair Value	Admitted Assets	Level 1	Level 2	Level 3			
Financial assets:								
Bonds:								
U. S. government and agencies	\$ 4,443,306	\$ 4,444,411	\$ -	\$ 4,443,306	\$ -	\$ -	\$ -	-
Special revenue	35,107	30,727	-	35,107	-	-	-	-
Industrial and miscellaneous	234,501,816	216,864,209	-	234,382,170	119,646	-	-	-
Common stock - unaffiliated	11,685	11,685	11,685	-	-	-	-	-
Mortgage loans - residential	1,872,001	1,860,082	-	-	1,872,001	-	-	-
Cash, cash equivalents and short-term investments	150,719,257	150,719,257	741,832	149,977,425	-	-	-	-
Separate account assets	4,929,080,046	4,889,383,145	1,297,717,373	3,622,141,580	9,221,093	-	-	-
Financial liabilities:								
Individual annuity contracts	3,051,852	2,934,473	-	-	3,051,852	-	-	-
Supplementary contracts	14,869,007	14,721,789	-	-	14,869,007	-	-	-
December 31, 2020								
	Aggregate Fair Value	Admitted Assets	Level 1	Level 2	Level 3	Net Asset Value (NAV)	Not Practicable (Carrying Value)	
Financial assets:								
Bonds:								
U. S. government and agencies	\$ 4,521,198	\$ 4,504,991	\$ -	\$ 4,521,198	\$ -	\$ -	\$ -	-
Special revenue	40,848	35,264	-	40,848	-	-	-	-
Industrial and miscellaneous	262,438,285	238,906,475	-	261,951,736	486,549	-	-	-
Mortgage loans - residential	2,149,234	2,090,393	-	-	2,149,234	-	-	-
Cash, cash equivalents and short-term investments	103,615,595	103,615,595	(1,932,163)	105,547,758	-	-	-	-
Separate account assets	4,929,390,678	4,858,831,848	1,195,557,522	3,723,465,405	10,367,751	-	-	-
Financial liabilities:								
Individual annuity contracts	3,181,417	3,059,214	-	-	3,181,417	-	-	-
Supplementary contracts	13,002,296	12,873,560	-	-	13,002,296	-	-	-

## NOTES TO FINANCIAL STATEMENTS

- d. As of September 30, 2021 and December 31, 2020, the Company had no investments where it was not practicable to estimate fair value.

### **Note 21 – Other Items**

- a. Unusual or infrequent items - No change
- b. Troubled debt restructuring - No change
- c. Other disclosures and unusual items:

#### Business risks

The Company operates in a business environment subject to various risks and uncertainties. The principal risks include insurance and underwriting risks, investment and interest rate risks and credit risk. The combined impact of these risks could have a material, adverse effect on the Company's financial statements or result in operating losses in future periods. The Company employs the use of reinsurance, portfolio diversification, asset/liability management processes and other risk management techniques to mitigate the impact of these risks. This condensed risks and uncertainties disclosure should be read in conjunction with the disclosure in the Company's 2020 Annual Statement.

#### Insurance and underwriting risks

The Company prices its products based on estimated benefit payments reflecting assumptions with respect to mortality, morbidity, longevity, persistency, interest rates and other factors. If actual policy experience emerges that is significantly and adversely different from assumptions used in product pricing, the effect could be material to the profitability of the Company. The Company reinsures certain life insurance policies to mitigate the impact of its underwriting risk.

#### Investment and interest rate risks

The fair value, cash flows and earnings of investments can be influenced by a variety of factors including changes in interest rates, credit spreads, equity markets, portfolio asset allocation and general economic conditions. The Company employs a rigorous asset/liability management process to help mitigate the economic impacts of various investment risks, in particular interest rate risk. By effectively matching the market sensitivity of assets with the liabilities they support, the impact of interest rate changes is addressed, on an economic basis, as the change in the value of the asset is offset by a corresponding change in the value of the supported liability.

The levels of U.S. interest rates are influenced by U.S. monetary policies and by the relative attractiveness of U.S. markets to investors versus other global markets. As interest rates increase, certain debt securities may experience amortization or prepayment speeds that are slower than those assumed at purchase, impacting the expected maturity of these securities and the ability to reinvest the proceeds at the higher yields. Rising interest rates may also result in a decrease in the fair value of the investment portfolio. As interest rates decline, certain debt securities may experience accelerated amortization and prepayment speeds than what was assumed at purchase. During such periods, the Company is at risk of lower net investment income as it may not be able to reinvest the proceeds at comparable yields. Declining interest rates may also increase the fair value of the investment portfolio.

Interest rates also have an impact on the Company's products with guaranteed minimum payouts and on interest credited to account holders. As interest rates decrease, investment spreads may contract as crediting rates approach minimum guarantees, resulting in an increased liability.

In periods of increasing interest rates, policy loans, surrenders and withdrawals may increase as policyholders seek investments with higher perceived returns. This could result in cash outflows requiring the Company to sell invested assets at a time when the prices of those assets are adversely affected by the increase in market interest rates, which could cause the Company to realize investment losses.

#### Credit and other market risks

The Company manages its investments to limit credit and other market risks by diversifying its portfolio among various security types and industry sectors as well as purchasing credit default swaps to transfer some of the risk.

Stressed conditions, volatility and disruptions in capital markets or financial asset classes can have an adverse effect on the Company, in part because the Company has a large investment portfolio and assets supporting the Company's insurance liabilities are sensitive to changing market factors. Market factors, including interest rates, credit spread, equity prices, consumer spending, business investment, government spending, the volatility and strength of the capital markets, deflation and inflation, all affect the business and economic environment and, ultimately, the profitability of the Company's business. Disruptions in one market or asset class can also spread to other markets or asset classes. Upheavals in the financial markets can also affect the Company's business through their effects on general levels of economic activity, employment and customer behavior.

Asset-based fees calculated as a percentage of the separate account assets are a source of revenue to the Company. Gains and losses in the investment markets may result in corresponding increases and decreases in the Company's separate account assets and related revenue.

The spread of the coronavirus, causing increased cases of COVID-19, around the world in 2020 has caused significant volatility in U.S. and international markets. There is significant uncertainty around the breadth and duration of business disruptions related to COVID-19, as well as its impact on the U.S. and international economies. At this time, the Company is not able to reliably estimate the length and severity of the COVID-19 public health crises and, as such, cannot quantify its impact on the financial results, liquidity and capital resources and its operations in future periods.

#### Political Uncertainties

Political events, domestically or internationally, may directly or indirectly trigger or exacerbate risks related to product offerings, profitability, or any of the risk factors described above. Whether those underlying risk factors are driven by politics or not, the Company's dynamic approach to managing risks enables management to identify risks, internally and externally, develop mitigation plans, and respond to risks in an attempt to proactively reduce the potential impact of each underlying risk factor on the Company.

- d. Business interruption insurance recoveries - No change
- e. State transferrable tax credits - No change
- f. Subprime mortgage related risk exposure:
- (1) No change
  - (2) No change

## NOTES TO FINANCIAL STATEMENTS

## (3) Direct exposure through other investments:

Residential mortgage-backed securities risk exposure:

Alt-A:	September 30, 2021			Nine Months Ended
	Actual Cost	Carrying Value	Fair Value	September 30, 2021 OTTI
a. Residential mortgage-backed securities	\$ 383,572	\$ 470,104	\$ 531,878	\$ -
b. Commercial mortgage-backed securities	-	-	-	-
c. Collateralized debt obligations	-	-	-	-
d. Structured securities	-	-	-	-
e. Equity investments in SCA	-	-	-	-
f. Other assets	-	-	-	-
g. Total	\$ 383,572	\$ 470,104	\$ 531,878	\$ -

Alt-A:	December 31, 2020			Year Ended
	Actual Cost	Carrying Value	Fair Value	December 31, 2020 OTTI
a. Residential mortgage-backed securities	\$ 443,488	\$ 560,994	\$ 648,451	\$ -
b. Commercial mortgage-backed securities	-	-	-	-
c. Collateralized debt obligations	-	-	-	-
d. Structured securities	-	-	-	-
e. Equity investments in SCA	-	-	-	-
f. Other assets	-	-	-	-
g. Total	\$ 443,488	\$ 560,994	\$ 648,451	\$ -

(4) The Company has no underwriting exposure to subprime mortgage risk through Mortgage Guaranty or Financial Guaranty insurance coverage.

g. Retained asset accounts - No change

**Note 22 – Events Subsequent**

Management of the Company has evaluated subsequent events through November 12, 2021, the date the financial statements were available to be issued to state regulators and subsequently on the Company's website. No events have occurred subsequent to the date of the financial statements.

**Note 23 – Reinsurance** - No change**Note 24 – Retrospectively Rated Contracts and Contracts Subject to Redetermination**

a – d. No change

e. The Company does not write any accident and health insurance premium that is subject to the Affordable Care Act risk-sharing provisions.

**Note 25 – Change in Incurred Losses and Loss Adjustment Expenses**

There was no increase to reserves in 2021 for incurred losses and loss adjustment expenses attributable to insured events of prior years, which considered corrections of prior year errors.

**Note 26 – Intercompany Pooling Arrangements** - No change**Note 27 – Structured Settlements** - No change**Note 28 – Health Care Receivables** - No change**Note 29 – Participating Policies** - No change**Note 30 – Premium Deficiency Reserves** - No change**Note 31 – Reserves for Life Contracts and Annuity Contracts** - No change**Note 32 – Analysis of Annuity Actuarial Reserves and Deposit Type Liabilities by Withdrawal Characteristics** - No change**Note 33 – Analysis of Life Actuarial Reserves by Withdrawal Characteristics** - No change**Note 34 – Premium and Annuity Considerations Deferred and Uncollected** - No change**Note 35 – Separate Accounts** - No change**Note 36 – Loss/Claim Adjustment Expenses** - No change

# GENERAL INTERROGATORIES

## PART 1 - COMMON INTERROGATORIES

### GENERAL

- 1.1 Did the reporting entity experience any material transactions requiring the filing of Disclosure of Material Transactions with the State of Domicile, as required by the Model Act? ..... Yes [ ] No [ X ]
- 1.2 If yes, has the report been filed with the domiciliary state? ..... Yes [ ] No [ ]
- 2.1 Has any change been made during the year of this statement in the charter, by-laws, articles of incorporation, or deed of settlement of the reporting entity? ..... Yes [ ] No [ X ]
- 2.2 If yes, date of change: .....
- 3.1 Is the reporting entity a member of an Insurance Holding Company System consisting of two or more affiliated persons, one or more of which is an insurer? ..... Yes [ X ] No [ ]  
If yes, complete Schedule Y, Parts 1 and 1A.
- 3.2 Have there been any substantial changes in the organizational chart since the prior quarter end? ..... Yes [ ] No [ X ]
- 3.3 If the response to 3.2 is yes, provide a brief description of those changes.
- 3.4 Is the reporting entity publicly traded or a member of a publicly traded group? ..... Yes [ ] No [ X ]
- 3.5 If the response to 3.4 is yes, provide the CIK (Central Index Key) code issued by the SEC for the entity/group. ....
- 4.1 Has the reporting entity been a party to a merger or consolidation during the period covered by this statement? ..... Yes [ ] No [ X ]  
If yes, complete and file the merger history data file with the NAIC.
- 4.2 If yes, provide the name of the entity, NAIC Company Code, and state of domicile (use two letter state abbreviation) for any entity that has ceased to exist as a result of the merger or consolidation.

1 Name of Entity	2 NAIC Company Code	3 State of Domicile

5. If the reporting entity is subject to a management agreement, including third-party administrator(s), managing general agent(s), attorney-in-fact, or similar agreement, have there been any significant changes regarding the terms of the agreement or principals involved? ..... Yes [ ] No [ X ] N/A [ ]  
If yes, attach an explanation.
- 6.1 State as of what date the latest financial examination of the reporting entity was made or is being made. .... 12/31/2019
- 6.2 State the as of date that the latest financial examination report became available from either the state of domicile or the reporting entity. This date should be the date of the examined balance sheet and not the date the report was completed or released. .... 12/31/2019
- 6.3 State as of what date the latest financial examination report became available to other states or the public from either the state of domicile or the reporting entity. This is the release date or completion date of the examination report and not the date of the examination (balance sheet date). .... 06/16/2021
- 6.4 By what department or departments?
- 6.5 Have all financial statement adjustments within the latest financial examination report been accounted for in a subsequent financial statement filed with Departments? ..... Yes [ ] No [ ] N/A [ X ]
- 6.6 Have all of the recommendations within the latest financial examination report been complied with? ..... Yes [ X ] No [ ] N/A [ ]
- 7.1 Has this reporting entity had any Certificates of Authority, licenses or registrations (including corporate registration, if applicable) suspended or revoked by any governmental entity during the reporting period? ..... Yes [ ] No [ X ]
- 7.2 If yes, give full information:
- 8.1 Is the company a subsidiary of a bank holding company regulated by the Federal Reserve Board? ..... Yes [ ] No [ X ]
- 8.2 If response to 8.1 is yes, please identify the name of the bank holding company.
- 8.3 Is the company affiliated with one or more banks, thrifts or securities firms? ..... Yes [ X ] No [ ]
- 8.4 If response to 8.3 is yes, please provide below the names and location (city and state of the main office) of any affiliates regulated by a federal regulatory services agency [i.e. the Federal Reserve Board (FRB), the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC) and the Securities Exchange Commission (SEC)] and identify the affiliate's primary federal regulator.

1 Affiliate Name	2 Location (City, State)	3 FRB	4 OCC	5 FDIC	6 SEC
Barings LLC	Charlotte, NC				YES
Baring International Investment Limited	London, UK				YES
Barings Securities LLC	Charlotte, NC				YES
MML Distributors, LLC	Springfield, MA				YES
MML Investment Advisers, LLC	Springfield, MA				YES
MML Investors Services, LLC	Springfield, MA				YES
MML Strategic Distributors, LLC	Springfield, MA				YES
The MassMutual Trust Company, OCC	Enfield, CT		YES		
Flourish Financial LLC	New York, NY				YES



## GENERAL INTERROGATORIES

- 9.1 Are the senior officers (principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions) of the reporting entity subject to a code of ethics, which includes the following standards? ..... Yes [  ] No [  ]  
 (a) Honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships;  
 (b) Full, fair, accurate, timely and understandable disclosure in the periodic reports required to be filed by the reporting entity;  
 (c) Compliance with applicable governmental laws, rules and regulations;  
 (d) The prompt internal reporting of violations to an appropriate person or persons identified in the code; and  
 (e) Accountability for adherence to the code.
- 9.11 If the response to 9.1 is No, please explain:
- 9.2 Has the code of ethics for senior managers been amended? ..... Yes [  ] No [  ]
- 9.21 If the response to 9.2 is Yes, provide information related to amendment(s).
- 9.3 Have any provisions of the code of ethics been waived for any of the specified officers? ..... Yes [  ] No [  ]
- 9.31 If the response to 9.3 is Yes, provide the nature of any waiver(s).

### FINANCIAL

- 10.1 Does the reporting entity report any amounts due from parent, subsidiaries or affiliates on Page 2 of this statement? ..... Yes [  ] No [  ]
- 10.2 If yes, indicate any amounts receivable from parent included in the Page 2 amount: ..... \$ .....

### INVESTMENT

- 11.1 Were any of the stocks, bonds, or other assets of the reporting entity loaned, placed under option agreement, or otherwise made available for use by another person? (Exclude securities under securities lending agreements.) ..... Yes [  ] No [  ]
- 11.2 If yes, give full and complete information relating thereto:
12. Amount of real estate and mortgages held in other invested assets in Schedule BA: ..... \$ .....
13. Amount of real estate and mortgages held in short-term investments: ..... \$ .....
- 14.1 Does the reporting entity have any investments in parent, subsidiaries and affiliates? ..... Yes [  ] No [  ]
- 14.2 If yes, please complete the following:
- |   | 1<br>Prior Year-End<br>Book/Adjusted<br>Carrying Value | 2<br>Current Quarter<br>Book/Adjusted<br>Carrying Value |
|---|--|---|
| 14.21 Bonds .....   | \$ .....   | \$ .....  |
| 14.22 Preferred Stock .....   | \$ .....   | \$ .....  |
| 14.23 Common Stock .....  | \$ .....   | \$ .....  |
| 14.24 Short-Term Investments .....  | \$ .....   | \$ .....  |
| 14.25 Mortgage Loans on Real Estate .....   | \$ .....   | \$ .....  |
| 14.26 All Other .....   | \$ .....   | \$ .....  |
| 14.27 Total Investment in Parent, Subsidiaries and Affiliates (Subtotal Lines 14.21 to 14.26) ..... | \$ .....   | \$ .....  |
| 14.28 Total Investment in Parent included in Lines 14.21 to 14.26 above .....                       | \$ .....   | \$ .....  |
- 15.1 Has the reporting entity entered into any hedging transactions reported on Schedule DB? ..... Yes [  ] No [  ]
- 15.2 If yes, has a comprehensive description of the hedging program been made available to the domiciliary state? ..... Yes [  ] No [  ] N/A [  ]  
 If no, attach a description with this statement.
16. For the reporting entity's security lending program, state the amount of the following as of the current statement date:
- 16.1 Total fair value of reinvested collateral assets reported on Schedule DL, Parts 1 and 2. .... \$ .....
- 16.2 Total book adjusted/carrying value of reinvested collateral assets reported on Schedule DL, Parts 1 and 2 ..... \$ .....
- 16.3 Total payable for securities lending reported on the liability page. .... \$ .....

**GENERAL INTERROGATORIES**

17. Excluding items in Schedule E - Part 3 - Special Deposits, real estate, mortgage loans and investments held physically in the reporting entity's offices, vaults or safety deposit boxes, were all stocks, bonds and other securities, owned throughout the current year held pursuant to a custodial agreement with a qualified bank or trust company in accordance with Section 1, III - General Examination Considerations, F. Outsourcing of Critical Functions, Custodial or Safekeeping Agreements of the NAIC Financial Condition Examiners Handbook? ..... Yes [  ] No [  ]
- 17.1 For all agreements that comply with the requirements of the NAIC Financial Condition Examiners Handbook, complete the following:

1 Name of Custodian(s)	2 Custodian Address
Citibank, N.A. ....	333 West 34th Street, New York, NY 10001 .....

- 17.2 For all agreements that do not comply with the requirements of the NAIC Financial Condition Examiners Handbook, provide the name, location and a complete explanation:

1 Name(s)	2 Location(s)	3 Complete Explanation(s)

- 17.3 Have there been any changes, including name changes, in the custodian(s) identified in 17.1 during the current quarter? ..... Yes [  ] No [  ]

- 17.4 If yes, give full information relating thereto:

1 Old Custodian	2 New Custodian	3 Date of Change	4 Reason

- 17.5 Investment management – Identify all investment advisors, investment managers, broker/dealers, including individuals that have the authority to make investment decisions on behalf of the reporting entity. For assets that are managed internally by employees of the reporting entity, note as such. ["...that have access to the investment accounts"; "...handle securities"]

1 Name of Firm or Individual	2 Affiliation
Barings LLC .....	A.....

- 17.5097 For those firms/individuals listed in the table for Question 17.5, do any firms/individuals unaffiliated with the reporting entity (i.e. designated with a "U") manage more than 10% of the reporting entity's invested assets?..... Yes [  ] No [  ]

- 17.5098 For firms/individuals unaffiliated with the reporting entity (i.e. designated with a "U") listed in the table for Question 17.5, does the total assets under management aggregate to more than 50% of the reporting entity's invested assets?..... Yes [  ] No [  ]

- 17.6 For those firms or individuals listed in the table for 17.5 with an affiliation code of "A" (affiliated) or "U" (unaffiliated), provide the information for the table below.

1 Central Registration Depository Number	2 Name of Firm or Individual	3 Legal Entity Identifier (LEI)	4 Registered With	5 Investment Management Agreement (IMA) Filed
106006 .....	Barings LLC .....	549300X8U1KFZ24TU94 .....	SEC .....	DS.....

- 18.1 Have all the filing requirements of the Purposes and Procedures Manual of the NAIC Investment Analysis Office been followed? ..... Yes [  ] No [  ]

- 18.2 If no, list exceptions:

19. By self-designating 5GI securities, the reporting entity is certifying the following elements for each self-designated 5GI security:
- Documentation necessary to permit a full credit analysis of the security does not exist or an NAIC CRP credit rating for an FE or PL security is not available.
  - Issuer or obligor is current on all contracted interest and principal payments.
  - The insurer has an actual expectation of ultimate payment of all contracted interest and principal.
- Has the reporting entity self-designated 5GI securities? ..... Yes [  ] No [  ]

20. By self-designating PLGI securities, the reporting entity is certifying the following elements of each self-designated PLGI security:
- The security was purchased prior to January 1, 2018.
  - The reporting entity is holding capital commensurate with the NAIC Designation reported for the security.
  - The NAIC Designation was derived from the credit rating assigned by an NAIC CRP in its legal capacity as a NRSRO which is shown on a current private letter rating held by the insurer and available for examination by state insurance regulators.
  - The reporting entity is not permitted to share this credit rating of the PL security with the SVO.
- Has the reporting entity self-designated PLGI securities? ..... Yes [  ] No [  ]

21. By assigning FE to a Schedule BA non-registered private fund, the reporting entity is certifying the following elements of each self-designated FE fund:
- The shares were purchased prior to January 1, 2019.
  - The reporting entity is holding capital commensurate with the NAIC Designation reported for the security.
  - The security had a public credit rating(s) with annual surveillance assigned by an NAIC CRP in its legal capacity as an NRSRO prior to January 1, 2019.
  - The fund only or predominantly holds bonds in its portfolio.
  - The current reported NAIC Designation was derived from the public credit rating(s) with annual surveillance assigned by an NAIC CRP in its legal capacity as an NRSRO.
  - The public credit rating(s) with annual surveillance assigned by an NAIC CRP has not lapsed.
- Has the reporting entity assigned FE to Schedule BA non-registered private funds that complied with the above criteria? ..... Yes [  ] No [  ]

## GENERAL INTERROGATORIES

### PART 2 - LIFE AND ACCIDENT AND HEALTH COMPANIES/FRATERNAL BENEFIT SOCIETIES

**Life and Accident Health Companies/Fraternal Benefit Societies:**

1. Report the statement value of mortgage loans at the end of this reporting period for the following categories: 1  
Amount
- 1.1 Long-Term Mortgages In Good Standing
- 1.11 Farm Mortgages ..... \$ .....
- 1.12 Residential Mortgages ..... \$ ..... 1,860,082
- 1.13 Commercial Mortgages ..... \$ .....
- 1.14 Total Mortgages in Good Standing ..... \$ ..... 1,860,082
- 1.2 Long-Term Mortgages In Good Standing with Restructured Terms
- 1.21 Total Mortgages in Good Standing with Restructured Terms ..... \$ .....
- 1.3 Long-Term Mortgage Loans Upon which Interest is Overdue more than Three Months
- 1.31 Farm Mortgages ..... \$ .....
- 1.32 Residential Mortgages ..... \$ .....
- 1.33 Commercial Mortgages ..... \$ .....
- 1.34 Total Mortgages with Interest Overdue more than Three Months ..... \$ .....
- 1.4 Long-Term Mortgage Loans in Process of Foreclosure
- 1.41 Farm Mortgages ..... \$ .....
- 1.42 Residential Mortgages ..... \$ .....
- 1.43 Commercial Mortgages ..... \$ .....
- 1.44 Total Mortgages in Process of Foreclosure ..... \$ .....
- 1.5 Total Mortgage Loans (Lines 1.14 + 1.21 + 1.34 + 1.44) (Page 2, Column 3, Lines 3.1 + 3.2) ..... \$ ..... 1,860,082
- 1.6 Long-Term Mortgages Foreclosed, Properties Transferred to Real Estate in Current Quarter
- 1.61 Farm Mortgages ..... \$ .....
- 1.62 Residential Mortgages ..... \$ .....
- 1.63 Commercial Mortgages ..... \$ .....
- 1.64 Total Mortgages Foreclosed and Transferred to Real Estate ..... \$ .....
2. Operating Percentages:
- 2.1 A&H loss percent ..... %
- 2.2 A&H cost containment percent ..... %
- 2.3 A&H expense percent excluding cost containment expenses ..... %
- 3.1 Do you act as a custodian for health savings accounts? ..... Yes [ ] No [ X ]
- 3.2 If yes, please provide the amount of custodial funds held as of the reporting date ..... \$ .....
- 3.3 Do you act as an administrator for health savings accounts? ..... Yes [ ] No [ X ]
- 3.4 If yes, please provide the balance of the funds administered as of the reporting date ..... \$ .....
4. Is the reporting entity licensed or chartered, registered, qualified, eligible or writing business in at least two states? ..... Yes [ X ] No [ ]
- 4.1 If no, does the reporting entity assume reinsurance business that covers risks residing in at least one state other than the state of domicile of the reporting entity? ..... Yes [ ] No [ ]

**Fraternal Benefit Societies Only:**

- 5.1 In all cases where the reporting entity has assumed accident and health risks from another company, provisions should be made in this statement on account of such reinsurances for reserve equal to that which the original company would have been required to establish had it retained the risks. Has this been done? ..... Yes [ ] No [ ] N/A [ ]
- 5.2 If no, explain:  
.....
- 6.1 Does the reporting entity have outstanding assessments in the form of liens against policy benefits that have increased surplus? ..... Yes [ ] No [ ]
- 6.2 If yes, what is the date(s) of the original lien and the total outstanding balance of liens that remain in surplus?

Date	Outstanding Lien Amount
.....	.....

**SCHEDULE S - CEDED REINSURANCE**

Showing All New Reinsurance Treaties - Current Year to Date

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Reinsurer	5 Domiciliary Jurisdiction	6 Type of Reinsurance Contract	7 Type of Business Ceded	8 Type of Reinsurer	9 Certified Reinsurer Rating (1 through 6)	10 Effective Date of Certified Reinsurer Rating
<b>NONE</b>									

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company  
**SCHEDULE T - PREMIUMS AND ANNUITY CONSIDERATIONS**

Current Year To Date - Allocated by States and Territories

States, Etc.	1	Life Contracts		Direct Business Only			
		2	3	4	5	6	7
	Active Status (a)	Life Insurance Premiums	Annuity Considerations	Accident and Health Insurance Premiums, Including Policy, Membership and Other Fees	Other Considerations	Total Columns 2 Through 5	Deposit-Type Contracts
1. Alabama	AL	L	128,690			128,690	
2. Alaska	AK	L	5,400			5,400	
3. Arizona	AZ	L	507,878			507,878	
4. Arkansas	AR	L	68,868			68,868	
5. California	CA	L	2,455,044			2,455,044	
6. Colorado	CO	L	409,892			409,892	
7. Connecticut	CT	L	501,357			501,357	
8. Delaware	DE	L	72,989			72,989	
9. District of Columbia	DC	L	333,948			333,948	
10. Florida	FL	L	1,338,899			1,338,899	
11. Georgia	GA	L	424,421			424,421	
12. Hawaii	HI	L	132,792			132,792	
13. Idaho	ID	L	48,819			48,819	
14. Illinois	IL	L	772,598			772,598	
15. Indiana	IN	L	294,428			294,428	
16. Iowa	IA	L	297,073	1,350		298,423	
17. Kansas	KS	L	170,077			170,077	
18. Kentucky	KY	L	147,858			147,858	
19. Louisiana	LA	L	216,877			216,877	
20. Maine	ME	L	106,151			106,151	
21. Maryland	MD	L	582,761			582,761	
22. Massachusetts	MA	L	657,497			657,497	
23. Michigan	MI	L	1,061,444	6,000		1,067,444	
24. Minnesota	MN	L	287,621			287,621	
25. Mississippi	MS	L	140,819			140,819	
26. Missouri	MO	L	321,044			321,044	
27. Montana	MT	L	135,216			135,216	
28. Nebraska	NE	L	219,692	6,550		226,242	
29. Nevada	NV	L	196,298			196,298	
30. New Hampshire	NH	L	83,432			83,432	
31. New Jersey	NJ	L	941,119			941,119	
32. New Mexico	NM	L	68,462			68,462	
33. New York	NY	N	91,580			91,580	
34. North Carolina	NC	L	833,241			833,241	
35. North Dakota	ND	L	5,002			5,002	
36. Ohio	OH	L	814,963			814,963	
37. Oklahoma	OK	L	491,053			491,053	
38. Oregon	OR	L	225,811			225,811	
39. Pennsylvania	PA	L	1,225,814			1,225,814	
40. Rhode Island	RI	L	148,740			148,740	
41. South Carolina	SC	L	416,916			416,916	
42. South Dakota	SD	L	18,944			18,944	
43. Tennessee	TN	L	392,931			392,931	
44. Texas	TX	L	1,652,311			1,652,311	
45. Utah	UT	L	230,830			230,830	
46. Vermont	VT	L	52,960	900		53,860	
47. Virginia	VA	L	1,350,147			1,350,147	
48. Washington	WA	L	417,738			417,738	
49. West Virginia	WV	L	115,404			115,404	
50. Wisconsin	WI	L	218,124			218,124	
51. Wyoming	WY	L	16,468			16,468	
52. American Samoa	AS	N					
53. Guam	GU	N					
54. Puerto Rico	PR	N					
55. U.S. Virgin Islands	VI	N					
56. Northern Mariana Islands	MP	N					
57. Canada	CAN	N	2,800			2,800	
58. Aggregate Other Aliens	OT	XXX	43,317			43,317	
59. Subtotal	XXX		21,894,558	14,800		21,909,358	
90. Reporting entity contributions for employee benefits plans	XXX						
91. Dividends or refunds applied to purchase paid-up additions and annuities	XXX						
92. Dividends or refunds applied to shorten endowment or premium paying period	XXX						
93. Premium or annuity considerations waived under disability or other contract provisions	XXX	285,281				285,281	
94. Aggregate or other amounts not allocable by State	XXX						
95. Totals (Direct Business)	XXX	22,179,839	14,800			22,194,639	
96. Plus Reinsurance Assumed	XXX						
97. Totals (All Business)	XXX	22,179,839	14,800			22,194,639	
98. Less Reinsurance Ceded	XXX	18,757,429				18,757,429	
99. Totals (All Business) less Reinsurance Ceded	XXX	3,422,410	14,800			3,437,210	
DETAILS OF WRITE-INS							
58001. ZZZ Other Alien	XXX	43,317				43,317	
58002.	XXX						
58003.	XXX						
58998. Summary of remaining write-ins for Line 58 from overflow page	XXX						
58999. Totals (Lines 58001 through 58003 plus 58998)(Line 58 above)	XXX	43,317				43,317	
9401.	XXX						
9402.	XXX						
9403.	XXX						
9498. Summary of remaining write-ins for Line 94 from overflow page	XXX						
9499. Totals (Lines 9401 through 9403 plus 9498)(Line 94 above)	XXX						

(a) Active Status Counts:

L - Licensed or Chartered - Licensed Insurance carrier or domiciled RRG ..... 50  
E - Eligible - Reporting entities eligible or approved to write surplus lines in the state .....  
N - None of the above - Not allowed to write business in the state ..... 7

R - Registered - Non-domiciled RRGs .....  
Q - Qualified - Qualified or accredited reinsurer. ....

# SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP

## PART 1 – ORGANIZATIONAL CHART

The following entities are general partner level or above of **Massachusetts Mutual Life Insurance Company** (Parent)

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
<b>MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY</b>	04-1590850	65935	Massachusetts
<b>Direct &amp; Indirect Owned Subsidiaries:</b>			
C.M. Life Insurance Company	06-1041383	93432	Connecticut
MML Bay State Life Insurance Company	43-0581430	70416	Connecticut
CML Mezzanine Investor III, LLC	06-1041383		Delaware
CML Special Situations Investor LLC	None		Delaware
CML Global Capabilities LLC	None		Delaware
MM Global Capabilities I LLC	None		Delaware
MassMutual Global Business Services India LLP	None		India
MM Global Capabilities (Netherlands) B.V.	None		Netherlands
MassMutual Global Business Services Romania S.R.L.	None		Romania
MM Global Capabilities II LLC	None		Delaware
MM Global Capabilities I II LLC	None		Delaware
MM/Barings Multifamily TEBS 2020 LLC	None		Delaware
New Haven Holdco LLC	04-1590850		Delaware
Berkshire Way LLC	04-1590850		Delaware
MML Special Situations Investor LLC	None		Delaware
Timberland Forest Holding LLC	47-5322979		Delaware
Lyme Adirondack Forest Company, LLC	None		Delaware
Lyme Adirondack Timberlands I, LLC	None		Delaware
Lyme Adirondack Timberlands II, LLC	None		Delaware
MSP-SC, LLC	04-1590850		Delaware
Insurance Road LLC	04-1590850		Delaware
MassMutual Trad Private Equity LLC	04-1590850		Delaware
MassMutual Private Equity Funds LLC	04-1590850		Delaware
MassMutual Private Equity Funds Subsidiary LLC	04-1590850		Delaware
MassMutual Intellectual Property LLC	04-1590850		Delaware
Trad Investments I LLC	None		Delaware
ITPS Holding LLC	None		Delaware
HITPS LLC	None		Delaware
EM Opportunities LLC	None		Delaware
MassMutual MCAM Insurance Company, Inc.	None		Vermont
JFIN Parent LLC	None		Delaware
Jefferies Finance LLC	27-0105644		Delaware
JFIN GP Adviser LLC	None		Delaware
JFIN Fund III LLC	None		Delaware
Jefferies Credit Partners LLC	None		Delaware
APEX Credit Partners LLC	None		Delaware
JFAM GP LLC	None		Delaware

\*This entity is owned by another or multiple entities in the group. Please refer to Sch Y Part 1A for the ownership and percentage information.

**SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP**  
**PART 1 – ORGANIZATIONAL CHART**

12.1

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
JFAM GP LP	None		Delaware
Jefferies Direct Lending Fund C LP	None		Delaware
Jefferies DLF C Holdings LLC	None		Delaware
Jefferies Direct Lending Fund C SPE LLC	None		Delaware
JFIN Revolver Holdings LLC	None		Delaware
JFIN Revolver Holdings II LLC	None		Delaware
JFIN Co-Issuer Corporation	None		Delaware
JFIN Europe GP, S.a.r.l.	None		Luxembourg
Jefferies Finance Europe, S.L.P.	None		Luxembourg
Jefferies Finance Europe, SCSp	None		Luxembourg
Jefferies Finance Business Credit LLC	None		Delaware
JFIN Business Credit Fund I LLC	None		Delaware
JFIN High Yield Investments LLC	None		Delaware
JFIN LC Fund LLC	None		Delaware
JFIN Revolver CLO 2017 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2017-II Ltd.	None		Cayman Islands
JFIN Revolver CLO 2017-III Ltd.	None		Cayman Islands
JFIN Revolver CLO 2018 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2019 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2019-II Ltd.	None		Cayman Islands
JFIN Revolver CLO 2020 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2021-II Ltd.	None		Cayman Islands
JFIN Revolver Fund, L.P.	None		Delaware
JFIN Revolver Funding 2021 Ltd.	None		Delaware
JFIN Revolver Funding 2021-III Ltd.	None		Delaware
JFIN Revolver Funding 2021-IV Ltd.	None		Delaware
Apex Credit Holdings LLC	None		Delaware
JFIN CLO 2012 Ltd.	None		Cayman Islands
JFIN CLO 2013 Ltd.	None		Cayman Islands
JFIN CLO 2014 Ltd.	None		Cayman Islands
JFIN CLO 2014-II Ltd.	None		Cayman Islands
JFIN CLO 2015 Ltd.	None		Cayman Islands
JFIN CLO 2015-II Ltd.	None		Cayman Islands
JFIN CLO 2016 Ltd.	None		Cayman Islands
JFIN CLO 2017 Ltd.	None		Cayman Islands
JFIN CLO 2017 II Ltd.	None		Cayman Islands
Glidepath Holdings Inc.	86-2294635		Delaware
Great American Life Insurance Company	13-1935920	63312	Ohio
AAG Insurance Agency, LLC	31-1422717		Kentucky
Annuity Investors Life Insurance Company	31-1021738	93661	Ohio
Great American Advisors, LLC	31-1395344		Ohio

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**SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP**  
PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Manhattan National Holding Corporation	26-3260520		Ohio
Manhattan National Life Insurance Company	45-0252531	67083	Ohio
MassMutual Mortgage Lending LLC	None		Delaware
MM Copper Hill Road LLC	04-1590850		Delaware
MM Direct Private Investments Holding LLC	None		Delaware
MM Direct Private Investments UK Limited	None		United Kingdom
MM Investment Holding	None		Cayman Islands
MassMutual Asset Finance LLC*	26-0073611		Delaware
MMAF Equipment Finance LLC 2013-A	90-1005837		Delaware
MMAF Equipment Finance LLC 2014-A	36-4785301		Delaware
MMAF Equipment Finance LLC 2015-A	38-3969560		Delaware
MMAF Equipment Finance LLC 2016-A	32-0489588		Delaware
MMAF Equipment Finance LLC 2017-A	35-2590691		Delaware
MMAF Equipment Finance LLC 2017-B	32-0546197		Delaware
MMAF Equipment Finance LLC 2018-A	82-5335801		Delaware
MMAF Equipment Finance LLC 2019-A	83-3722640		Delaware
MMAF Equipment Finance LLC 2019-B	None		Delaware
MMAF Equipment Finance LLC 2021-A	None		Delaware
Rozier LLC	None		Delaware
MML Management Corporation	04-2443240		Massachusetts
MassMutual International Holding MSC, Inc.	04-3548444		Massachusetts
MassMutual Holding MSC, Inc.	04-3341767		Massachusetts
MML CM LLC	None		Delaware
Blueprint Income LLC	None		New York
Flourish Digital Assets LLC	None		Delaware
Flourish Financial LLC	None		Delaware
Flourish Technologies LLC	None		Delaware
MML Distributors LLC*	04-3356880		Massachusetts
MML Investment Advisers, LLC	None		Delaware
MML Strategic Distributors, LLC	46-3238013		Delaware
The MassMutual Trust Company, FSB	06-1563535		Connecticut
MML Private Placement Investment Company I, LLC	04-1590850		Delaware
MML Private Equity Fund Investor LLC	04-1590850		Delaware
MM Private Equity Intercontinental LLC	04-1590850		Delaware
Pioneers Gate LLC	45-2738137		Delaware
MassMutual Holding LLC	04-2854319		Delaware
Fern Street LLC	37-1732913		Delaware
Sleeper Street LLC	None		Delaware
Haven Life Insurance Agency, LLC	46-2252944		Delaware
MassMutual Assignment Company	06-1597528		North Carolina
MassMutual Capital Partners LLC	04-1590850		Delaware

\*This entity is owned by another or multiple entities in the group. Please refer to Sch Y Part 1A for the ownership and percentage information.



# SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP

## PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
MassMutual Ventures Holding LLC	None		Delaware
Athens Fund Management LLC	None		Delaware
Crane Venture Partners LLP	None		United Kingdom
MassMutual Ventures Management LLC	None		Delaware
MassMutual Ventures SEA Management Private Limited	None		Singapore
MassMutual Ventures Southeast Asia I LLC	None		Delaware
MassMutual Ventures Southeast Asia II LLC	None		Delaware
MassMutual Ventures UK LLC	None		Delaware
MassMutual Ventures US I LLC	47-1296410		Delaware
MassMutual Ventures US II LLC	None		Delaware
MassMutual Ventures US III LLC	None		Delaware
Open Alternatives LLC	None		Delaware
MM Catalyst Fund LLC	None		Delaware
MM Rothesay Holdco US LLC	04-1590850		Delaware
Rothesay Limited	None		United Kingdom
Rothesay Life Plc	None		United Kingdom
Rothesay MA No.1 Limited	None		United Kingdom
Rothesay MA No.2 Limited	None		United Kingdom
Rothesay MA No.3 Limited	None		United Kingdom
Rothesay MA No.4 Limited	None		United Kingdom
LT Mortgage Finance Limited	None		United Kingdom
Rothesay Property Partnership 1 LLP	None		United Kingdom
Rothesay Foundation	None		United Kingdom
Rothesay Pensions Management Limited	None		United Kingdom
Rothesay Asset Management UK Limited	None		United Kingdom
Rothesay Asset Management Australia Pty Ltd	None		Australia
Rothesay Asset Management US LLC	None		Delaware
MML Investors Services, LLC	04-1590850		Massachusetts
MML Insurance Agency, LLC	04-1590850		Massachusetts
MMLISI Financial Alliances, LLC	41-2011634		Delaware
LifeScore Labs, LLC	47-1466022		Massachusetts
MM Asset Management Holding LLC	45-4000072		Delaware
Barings LLC	51-0504477		Delaware
Baring Asset Management (Asia) Holdings Limited	98-0524271		Hong Kong, Special Administrative Region of China
Baring International Fund Managers (Bermuda) Limited	98-0457465		Bermuda
Baring Asset Management (Asia) Limited	98-0457463		Hong Kong, Special Administrative Region of China
Baring Asset Management Korea Limited	None		Korea
Barings Investment Management (Shanghai) Limited	None		Hong Kong, Special Administrative Region of China
Barings Overseas Investment Fund Management (Shanghai) Limited	None		Hong Kong, Special Administrative Region of China
Baring SICE (Taiwan) Limited	98-0457707		Taiwan ROC
Barings Singapore Pte. Ltd.	None		Singapore

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**SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP**  
PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Barings Japan Limited	98-0236449		Japan
Barings Australia Holding Company Pty Ltd	None		Australia
Barings Australia Pty Ltd	98-0457456		Australia
Barings Finance LLC	80-0875475		Delaware
BCF Europe Funding Limited	None		Ireland
BCF Senior Funding I LLC	None		Delaware
BCF Senior Funding I Designated Activity Company	None		Ireland
Barings Securities LLC	04-3238351		Delaware
Barings Guernsey Limited	98-0437588		Guernsey
Barings Europe Limited	None		United Kingdom
Barings Asset Management Spain SL	None		Spain
Barings Italy S.r.l.	None		Italy
Barings Sweden AB	None		Sweden
Barings Finland Oy	None		Finland
Barings Netherlands B.V.	None		Netherlands
Barings Real Estate UK Holdings Limited	None		Delaware
Barings Real Estate Advisers (Continental Europe) Limited	98-0654401		United Kingdom
Barings Real Estate Advisers Europe LLP	98-0654388		United Kingdom
Barings Real Estate GmbH	98-1194368		Germany
Baring Asset Management Limited	98-0241935		United Kingdom
Barings European Direct Lending 1 GP LLP	None		United Kingdom
Barings Global Advisors Limited	98-1012393		United Kingdom
Baring International Investment Limited	98-0457328		United Kingdom
Baring International Investment Management Holdings	98-0457587		United Kingdom
Baring Asset Management UK Holdings Limited	98-0457576		United Kingdom
Baring Asset Management GmbH	98-0465031		Germany
Baring International Fund Managers (Ireland) Limited	98-0524272		Ireland
Baring Asset Management Switzerland Sàrl	None		Switzerland
Baring France SAS	98-0497550		France
Baring Fund Managers Limited	98-0457586		United Kingdom
BCGSS 2 GP LLP	None		United Kingdom
Baring Investment Services Limited	98-0457578		United Kingdom
Barings Core Fund Feeder I GP S.à.r.l.	None		Luxembourg
Barings Investment Fund (LUX) GP S.à r.l.	None		Luxembourg
Barings BME GP S.à.r.l.	None		United Kingdom
Barings GPC GP S.à.r.l.	None		Luxembourg
Barings European Core Property Fund GP Sà.r.l	None		United Kingdom
Barings Umbrella Fund (LUX) GP S.à.r.l.	None		Luxembourg
GPLF4(S) GP S.à r.l	None		Luxembourg
PREIF Holdings Limited Partnership	None		United Kingdom

\*This entity is owned by another or multiple entities in the group. Please refer to Sch Y Part 1A for the ownership and percentage information.

**SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP**  
**PART 1 – ORGANIZATIONAL CHART**

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Almack Holding Partnership GP Limited	None		United Kingdom
Almack Mezzanine Fund Limited	None		United Kingdom
Barings (U.K.) Limited	98-0432153		United Kingdom
BMC Holdings DE LLC	None		Delaware
Barings Real Estate Advisers Inc.	04-3238351		California
CRA Aircraft Holding LLC*	81-4258759		Delaware
Aland Royalty Holdings LP	None		Delaware
GASL Holdings LLC	None		Delaware
Intermodal Holding II LLC	46-2344300		Delaware
Milestone Acquisition Holding, LLC.	47-3055009		Delaware
Novation Companies, Inc.	None		Maryland
Red Lake Ventures, LLC	46-5460309		Delaware
Remington L & W Holdings LLC*	81-4065378		Connecticut
Tamiami Citrus, LLC	None		Delaware
Teaktree Acquisition, LLC	None		Delaware
Techquity, LP	None		Delaware
Validus Holding Company LLC	46-0687392		Delaware
Validus Pharmaceuticals LLC	None		Delaware
VGS Acquisition Holding, LLC	None		Delaware
Aland Royalty GP, LLC	None		Delaware
Alaska Future Fund GP, LLC	None		Delaware
BAI Funds SLP, LLC	None		Delaware
BAI GP, LLC	None		Delaware
Baring Asset-Based Income Fund (US) GP, LLC	None		Delaware
Barings CMS Fund GP, LLC	None		Delaware
Barings Hotel Opportunity Venture I GP, LLC	None		Delaware
Barings Investment Series LLC	None		Delaware
Barings Emerging Generation Fund GP, LLC	None		Delaware
Barings ERS PE Emerging Manager III GP, LLC	None		Delaware
Barings Global Investment Funds (U.S.) Management LLC	04-1590850		Delaware
Barings CLO Investment Partners GP, LLC	None		Delaware
Barings Core Property Fund GP LLC	None		Delaware
Barings Direct Lending GP Ltd.	None		Cayman Islands
Barings Emerging Generation Fund LP	84-3784245		Delaware
Barings Global Energy Infrastructure Advisors, LLC	None		Delaware
Barings Global Real Assets Fund GP, LLC	None		Delaware
Barings GPSF	None		Delaware
Barings North American Private Loan Fund Management, LLC	None		Delaware
Barings North American Private Loan Fund Management II, LLC	None		Delaware
Barings Small Business Fund LLC	84-5063008		Delaware
Benton Street Advisors, Inc.	98-0536233		Cayman Islands

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**SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP**  
PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Barings Small Business Fund LLC	84-5063008		Delaware
Benton Street Advisors, Inc.	98-0536233		Cayman Islands
BHOVI Incentive LLC	None		Delaware
BIG Real Estate Fund GP LLC	None		Delaware
BRECS VII GP LLC	None		Delaware
BREDIF GP LLC	None		Delaware
CEMF I GP LLC	None		Delaware
CHY Venture GP LLC	None		Delaware
CREF X GP LLC	None		Delaware
Great Lakes III GP, LLC	04-1590850		Delaware
Lake Jackson LLC	None		Delaware
Loan Strategies Management LLC	04-1590850		Delaware
Mezzco III LLC	41-2280126		Delaware
Mezzco IV LLC	80-0920285		Delaware
Mezzco Australia II LLC	None		Delaware
RECSA-NY GP LLC	None		Delaware
SBNP SIA II LLC	None		Delaware
SBNP SIA III LLC	None		Delaware
Somerset Special Opportunities Management LLC	04-1590850		Delaware
Amherst Long Term Holdings, LLC	None		Delaware
MassMutual International LLC	04-3313782		Delaware
MassMutual Solutions LLC	None		Delaware
Haven Technologies Asia Limited	None		Hong Kong
Yunfeng Financial Group Limited	None		Hong Kong
MassMutual Asia Limited (SPV)	None		Hong Kong
MML Mezzanine Investor II, LLC	04-1590850		Delaware
MML Mezzanine Investor III, LLC	04-1590850		Delaware
MassMutual External Benefits Group LLC	27-3576835		Delaware
<b>Other Affiliates &amp; Funds:</b>			
100 w. 3 <sup>rd</sup> Street LLC	04-1590850		Delaware
300 South Tryon Hotel LLC	82-2432216		Delaware
2160 Grand Manager LLC	04-1590850		Delaware
300 South Tryon LLC	04-1590850		Delaware
Almack Mezzanine Fund II Unleveraged LP	None		United Kingdom
Barings Affordable Housing Mortgage Fund I LLC	82-3468147		Delaware
Barings Affordable Housing Mortgage Fund II LLC	61-1902329		Delaware
Barings Affordable Housing Mortgage Fund III LLC	85-3036663		Delaware
Barings Asset-Based Income Fund (US) LP	36-4868350		Delaware
Barings Emerging Markets Corporate Bond Fund	None		Ireland
Barings European Real Estate Debt Income Fund	None		Luxembourg
Babson Capital Global Special Situation Credit Fund 2*	98-1206017		Delaware

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**SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP**  
PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Babson Capital Loan Strategies Fund, L.P.*	37-1506417		Delaware
Barings US High Yield Bond Fund*	None		Ireland
Babson CLO Ltd. 2012-II	None		Cayman Islands
Babson CLO Ltd. 2013-I	None		Cayman Islands
Babson CLO Ltd. 2014-I	None		Cayman Islands
Babson CLO Ltd. 2015-I	None		Cayman Islands
Babson CLO Ltd. 2015-II	None		Cayman Islands
Babson CLO Ltd. 2016-I	None		Cayman Islands
Babson CLO Ltd. 2016-II	None		Cayman Islands
Barings CLO Ltd. 2017-I	None		Cayman Islands
Barings CLO 2018-III	None		Cayman Islands
Barings CLO 2018-IV	None		Cayman Islands
Barings CLO 2019-II	98-1473665		Cayman Islands
Barings CLO 2019-III	None		Cayman Islands
Barings CLO 2019-IV	None		Cayman Islands
Barings CLO 2020-I	None		Cayman Islands
Barings CLO 2020-II	None		Cayman Islands
Barings CLO 2020-III	None		Cayman Islands
Barings CLO 2020-IV	None		Cayman Islands
Barings CLO 2021-I	ZJX0JL99999.SL.136		Cayman Islands
Barings CLO 2021-II	EPXAC4.99999.SL.136 (GIIN)		Cayman Islands
Babson Euro CLO 2014-I BV	None		Netherlands
Babson Euro CLO 2014-II BV	None		Netherlands
Babson Euro CLO 2015-I BV	None		Netherlands
Babson Euro CLO 2016-I BV	None		Netherlands
Barings Euro CLO 2019-I	3603726OH		Ireland
Barings Euro CLO 2019-II	None		Ireland
Barings Euro CLO 2020-I DAC	None		Ireland
Barings Euro CLO 2021-I DAC	3715576VH		Ireland
Barings Global Em. Markets Equity Fund	82-5330194		North Carolina
Barings Global Energy Infrastructure Fund I LP	98-1332384		Cayman Islands
Barings Global Inv. Grade Strat Fund	None		Ireland
Barings Global Private Loan Fund	None		Luxembourg
Barings Global Real Assets Fund LP	82-3867745		Delaware
Barings Global Special Situations Credit Fund 3	None		Ireland
Barings Global Special Situations Credit 4 Delaware*	85-1465973		Delaware
Barings Global Special Situations Credit 4 LUX*	98-1570693		Luxembourg
Barings Hotel Opportunity Venture	87-0977058		Connecticut
Barings Middle Market CLO 2017-I Ltd & LLC	None		Cayman Islands
Barings Middle Market CLO 2018-I	None		Cayman Islands
Barings Middle Market CLO 2019-I	None		Cayman Islands

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**SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP**  
PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Barings Middle Market CLO Ltd 2021-I	98-1612604		Cayman Islands
Barings North American Private Loan Fund LP	38-4010344		Delaware
Barings RE Credit Strategies VII LP	98-1332384		Delaware
Barings CLO Investment Partners LP	81-0841854		Delaware
Barings Euro Value Add II (BREEVA II)*	K15Q2K.99999.SL.442		Luxembourg
Barings Real Estate European Value Add I SCSp*	None		United Kingdom
Barings Real Estate Debt Income Fund LP*	85-3449260		Delaware
Braemar Energy Ventures I, L.P. *	None		Delaware
Barings European Core Property Fund SCSp	None		Luxembourg
Benchmark 2018-B2 Mortgage Trust	38-4059932		New York
Benchmark 2018-B4	None		New York
Benchmark 2018-B8	38-4096530		New York
Barings Core Property Fund LP	20-5578089		Delaware
Cornerstone Real Estate Fund VIII LP	27-0547156		Delaware
Cornerstone Real Estate Fund X LP	46-5432619		Delaware
Cornerstone Permanent Mortgage Fund III LLC	35-2531693		Massachusetts
Cornerstone Permanent Mortgage Fund IV LLC	61-1793735		Massachusetts
Eclipse Business Capital Holdings	EIN 87-1321958		Delaware
Gateway Mezzanine Partners II LP*	90-0991195		Delaware
Great Lakes III, L.P.	37-1708623		Delaware
GIA EU Holdings - Emerson JV Sarl	EIN 98-1607033		Luxembourg
JPMCC Commercial Mortgage Securities Trust 2017-JP7	38-4041011; 38-4041012		New York
JPMDB Commercial Mortgage Securities Trust 2017-C5	38-4032059		New York
KKR-MM Vector LP	82-1512591		Delaware
Marco Hotel LLC	46-4255307		Delaware
Miami Douglas One GP LLC*	04-1590850		Delaware
Miami Douglas Two GP LLC*	04-1590850		Delaware
Miami Douglas One LP*	04-1590850		Delaware
Miami Douglas Two LP*	04-1590850		Delaware
MM BIG Peninsula Co-Invest Member LLC	04-1590850		Massachusetts
NYDIG Digital Assets Fund II LP	85-3886824		Delaware
HB Naples Golf Owner LLC	45-3623262		Delaware
MM CM Holding LLC	None		Delaware
MM Debt Participations LLC	81-3000420		Delaware
RB Apartments LLC	82-4411267		Delaware
Reston Arboretum LLC	75-2901061		Delaware
Somerset Special Opportunities Fund L.P.*	20-8856877		Delaware
SouthPointe Industrial LLC	04-1590850		Delaware
Ten Fan Pier Boulevard LLC	35-2553915		Delaware
Tower Square Capital Partners III, L.P.	41-2280127		Delaware

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**SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP**  
PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Tower Square Capital Partners IIIA, L.P.	41-2280129		Delaware
Trailside MM Member LLC*	04-1590850		Delaware
Washington Gateway Two LLC*	83-1325764		Delaware
Washington Gateway Three LLC*	32-0574045		Delaware
West 46 <sup>th</sup> Street Hotel LLC	05-1590850		Delaware
<b>Barings Affiliates &amp; Funds:</b>			
Babson Capital Loan Strategies Master Fund LP	None		Cayman Islands
Barings China Aggregate Bond Private Securities Investment Fund	None		Peoples Republic of China
Barings European Growth Trust Fund	HU7DQI.00015.SF.826		United Kingdom
Barings Global High Yield Fund	47-3790192		Massachusetts
CCIC Fund	None		Peoples Republic of China
Great Lakes II LLC*	71-1018134		Delaware
Wood Creek Venture Fund LLC	04-1590850		Delaware
<b>Barings Real Estate Affiliates &amp; Funds:</b>			
50 Liberty LLC*	36-4823011		Delaware
Barings California Mortgage Fund IV	None		California
Barings Hotel Opportunity Venture	87-0977058		Delaware
Barings Umbrella Fund LUX SCSp SICAV RAIF*	None		Luxembourg
Calgary Railway Holding LLC*	82-2285211		Delaware
Combrook PRS Holdings LLC	82-3307907		Delaware
Comerstone California Mortgage Fund I LLC	95-4207717		California
Comerstone California Mortgage Fund II LLC	95-4207717		California
Comerstone California Mortgage Fund III LLC	95-4207717		California
Comerstone Fort Pierce Development LLC*	56-2630592		Delaware
Comerstone Permanent Mortgage Fund	45-2632610		Massachusetts
Comerstone Permanent Mortgage Fund II	61-1750537		Massachusetts
Comerstone Permanent Mortgage Fund III	35-2531693		Massachusetts
Comerstone Permanent Mortgage Fund IV	61-1793735		Massachusetts
CREA/PPC Venture LLC	20-0348173		Delaware
CREA Madison Member LLC	81-0890084		Delaware
Danville Riverwalk Venture, LLC	82-2783393		Delaware
Fan Pier Development LLC*	20-3347091		Delaware
GIA EU Holdings LLC	04-1590850		Delaware
Landmark Manchester Holdings LLC	81-5360103		Delaware
MM Island Member LLC	04-1590850		Delaware
NoHo West Venture LLC	83-0881588		Delaware
One Harbor Shore LLC*	80-0948028		Delaware
PACO France Logistics LLC	04-1590850		Delaware
Portland 400 Sixth Manager LLC	82-3393166		Delaware
Raleigh Crossing Phase I Holdings LLC	None		Delaware
Salomon Brothers Commercial Mortgage Trust 2001-MM	None		Delaware

\*This entity is owned by another or multiple entities in the group. Please refer to Sch Y Part 1A for the ownership and percentage information.

**SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP**  
PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Sawgrass Village Shopping Center LLC*	27-2977720		Delaware
STOA Holding LLC	None		Delaware
Three PW Office Holding LLC	81-5273574		Delaware
Twenty Two Liberty LLC*	35-2484550		Massachusetts
Unna, Dortmund Holding LLC	82-3250684		Delaware
Washington Gateway Apartments Venture LLC*	45-5401109		Delaware
<b>MassMutual Premier Funds:</b>			
MassMutual Premier Focused International Fund	02-0754273		Massachusetts
MassMutual Premier Main Street Fund	51-0529328		Massachusetts
MassMutual Premier Strategic Emerging Markets Fund	26-3229251		Massachusetts
<b>MassMutual Select Funds:</b>			
MassMutual Select Diversified Value Fund	01-0821120		Massachusetts
MassMutual Select Fundamental Growth Fund	04-3512593		Massachusetts
MassMutual Select Mid-Cap Value Fund	42-1710935		Massachusetts
MassMutual Select Small Capital Value Equity Fund	02-0769954		Massachusetts
MassMutual Select Small Company Value Fund	04-3584140		Massachusetts
MassMutual Select T. Rowe Price Retirement 2005 Fund	82-3347422		Massachusetts
MassMutual Select T. Rowe Price Retirement 2010 Fund	82-3355639		Massachusetts
MassMutual Select T. Rowe Price Retirement 2015 Fund	82-3382389		Massachusetts
MassMutual Select T. Rowe Price Retirement 2020 Fund	82-3396442		Massachusetts
MassMutual Select T. Rowe Price Retirement 2025 Fund	82-3417420		Massachusetts
MassMutual Select T. Rowe Price Retirement 2030 Fund	82-3430358		Massachusetts
MassMutual Select T. Rowe Price Retirement 2035 Fund	82-3439837		Massachusetts
MassMutual Select T. Rowe Price Retirement 2040 Fund	82-3451779		Massachusetts
MassMutual Select T. Rowe Price Retirement 2045 Fund	82-3472295		Massachusetts
MassMutual Select T. Rowe Price Retirement 2050 Fund	82-3481715		Massachusetts
MassMutual Select T. Rowe Price Retirement 2055 Fund	82-3502011		Massachusetts
MassMutual Select T. Rowe Price Retirement 2060 Fund	82-3525148		Massachusetts
MassMutual Select T. Rowe Price Retirement Balanced Fund	82-3533944		Massachusetts
<b>MML Series Investment Funds:</b>			
MML Series International Equity Fund	46-4257056		Massachusetts
<b>MML Series Investment Funds II:</b>			
MML Series II Asset Momentum Fund	47-3517233		Massachusetts
MML Series II Dynamic Bond Fund	47-3529636		Massachusetts
MML Series II Equity Rotation Fund	47-3544629		Massachusetts
MML Series II Special Situations Fund	47-3559064		Massachusetts
<b>MassMutual RetireSMART Funds:</b>			
MassMutual RetireSMART 2035 Fund	27-1933380		Massachusetts
MassMutual RetireSMART 2045 Fund	27-1932769		Massachusetts
MassMutual RetireSMART 2055 Fund	46-3289207		Massachusetts
MassMutual RetireSMART 2060 Fund	47-5326235		Massachusetts

\*This entity is owned by another or multiple entities in the group. Please refer to Sch Y Part 1A for the ownership and percentage information.



**SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP**  
PART 1 – ORGANIZATIONAL CHART

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	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
MassMutual 20/80 Allocation Fund	45-1618155		Massachusetts
MassMutual 80/20 Allocation Fund	45-1618222		Massachusetts
MassMutual RetireSMART In Retirement Fund	03-0532464		Massachusetts
MassMutual 40/60 Allocation Fund	45-1618262		Massachusetts
MassMutual 60/40 Allocation Fund	45-1618046		Massachusetts

\*This entity is owned by another or multiple entities in the group. Please refer to Sch Y Part 1A for the ownership and percentage information.

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domi-ciliary Location	Relation-ship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Y/N)	*
.0435	Massachusetts Mut Life Ins Co	65935	04-1590850	3848388			Massachusetts Mutual Life Insurance Company (MMLIC)	MA	UIP	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0435	Massachusetts Mut Life Ins Co	93432	06-1041383				C.M. Life Insurance Company	CT	UDP	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0435	Massachusetts Mut Life Ins Co	70416	43-0581430				MML Bay State Life Insurance Company	CT	RE	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1041383				CML Mezzanine Investor III, LLC	DE	NIA	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000							CML Special Situations Investor LLC	DE	NIA	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000							CML Global Capabilities LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MM Global Capabilities I LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MassMutual Global Business Services India LLP	IND	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MM Global Capabilities (Netherlands) B.V.	NLD	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MassMutual Global Business Services Romania S.R.L.	ROU	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MM Global Capabilities II LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MM Global Capabilities III LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MM/Barings Multifamily TEBS 2020 LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				New Haven Holdco LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MML Special Situations Investor LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			47-5322979				Timberland Forest Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			47-5322979				Timberland Forest Holding LLC	DE	NIA	C.M. Life Insurance Company	Ownership	0.000	MMLIC		
.0000			47-5322979				Timberland Forest Holding LLC	DE	NIA	Wood Creek Capital Management LLC	Management		MMLIC		
.0000							Lyme Adirondack Forest Company, LLC	DE	NIA	Timberland Forest Holding LLC	Ownership	100.000	MMLIC		
.0000							Lyme Adirondack Timberlands I, LLC	DE	NIA	Timberland Forest Holding LLC	Ownership	100.000	MMLIC		
.0000							Lyme Adirondack Timberlands II, LLC	DE	NIA	Timberland Forest Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Berkshire Way LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MSP-SC, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							EM Opportunities LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MassMutual MCAM Insurance Company, Inc.	VT	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				Insurance Road LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MassMutual Trad Private Equity LLC	DE	NIA	Insurance Road LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MassMutual Private Equity Funds LLC	DE	NIA	MassMutual Trad Private Equity LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Private Equity Funds Subsidiary LLC	DE	NIA	MassMutual Private Equity Funds LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MassMutual Intellectual Property LLC	DE	NIA	Insurance Road LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Trad Investments I LLC	DE	NIA	Insurance Road LLC	Ownership	100.000	MMLIC		
.0000							ITPSHolding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							HITPS LLC	DE	NIA	ITPS Holding LLC	Ownership	100.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE Y**  
**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domiciliary Location	Relationship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Required? (Y/N)	*
.0000							JFIN Parent LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			27-0105644				Jefferies Finance LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	50.000	MMLIC		1
.0000			86-2294635				Glidepath Holdings Inc.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000	Massachusetts Mut Life Ins Co	63312	13-1935920				Great American Life Insurance Company	OH	IA	Glidepath Holdings Inc.	Ownership	100.000	MMLIC		
.0000			31-1422717				AAG Insurance Agency, LLC	KY	NIA	Great American Life Insurance Company	Ownership	100.000	MMLIC		
.0000	Massachusetts Mut Life Ins Co	93661	31-1021738				Annuity Investors Life Insurance Company	OH	IA	Great American Life Insurance Company	Ownership	100.000	MMLIC		
.0000			31-1395344				Great American Advisors, LLC	OH	NIA	Great American Life Insurance Company	Ownership	100.000	MMLIC		
.0000			26-3260520				Manhattan National Holding Corporation	OH	NIA	Great American Life Insurance Company	Ownership	100.000	MMLIC		
.0000	Massachusetts Mut Life Ins Co	67083	45-0252531				Manhattan National Life Insurance Company	OH	IA	Manhattan National Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Mortgage Lending LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							JFIN GP Adviser LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Fund III LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Credit Partners LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Apex Credit Partners LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFAM GP LLC	DE	NIA	Jefferies Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFAM GP LP	DE	NIA	Jefferies Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Direct Lending Fund C LP	DE	NIA	Jefferies Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							Jefferies DLF C Holdings LLC	DE	NIA	Jefferies Direct Lending Fund C LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Direct Lending Fund C SPE LLC	DE	NIA	Jefferies DLF C Holdings LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver Holdings LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver Holdings II LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Co-Issuer Corporation	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Europe GP, S.a.r.l.	LUX	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Finance Europe, S.L.P.	LUX	NIA	JFIN Europe GP, S.a.r.l.	Ownership	100.000	MMLIC		
.0000							Jefferies Finance Europe, SCSp	LUX	NIA	JFIN Europe GP, S.a.r.l.	Ownership	100.000	MMLIC		
.0000							Jefferies Finance Business Credit LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Business Credit Fund I LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN High Yield Investments LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN LC Fund LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2017 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2017-II Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2017-III Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2018 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2019 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2019-II Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2020 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2021-II Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2021-III Ltd.	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver Fund, L.P.	DE	NIA	Jefferies Finance LLC	Ownership	90.000	MMLIC		
.0000							JFIN Revolver Funding 2021 Ltd.	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver Funding 2021 III Ltd.	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver Funding 2021 IV Ltd.	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver Funding 2021 IV Ltd.	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Apex Credit Holdings LLC	DE	NIA	JFIN Parent LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2012 Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2013 Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2014 Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2014-II Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2015 Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2015-II Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	85.000	MMLIC		

13.1

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domiciliary Location	Relationship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Required? (Y/N)	*
.0000							JFIN CLO 2016 Ltd.	.CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2017 Ltd.	.CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2017-II Ltd.	.CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MM Copper Hill Road LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MM Direct Private Investments Holding LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MM Direct Private Investments UK Limited	.GBR	NIA	MM Direct Private Investments Holding LLC	Ownership	100.000	MMLIC		
.0000							MM Investment Holding	.CYM	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			26-0073611				MassMutual Asset Finance LLC	.DE	NIA	MM Investment Holding	Ownership	99.600	MMLIC		
.0000			26-0073611				MassMutual Asset Finance LLC	.DE	NIA	C.M. Life Insurance Company	Ownership	0.400	MMLIC		
.0000			90-1005837				MMAF Equipment Finance LLC 2013-A	.DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			36-4785301				MMAF Equipment Finance LLC 2014-A	.DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			38-3969560				MMAF Equipment Finance LLC 2015-A	.DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			32-0489588				MMAF Equipment Finance LLC 2016-A	.DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			35-2590691				MMAF Equipment Finance LLC 2017-A	.DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			32-0546197				MMAF Equipment Finance LLC 2017-B	.DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			82-5335801				MMAF Equipment Finance LLC 2018-A	.DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			83-3722640				MMAF Equipment Finance LLC 2019-A	.DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000							MMAF Equipment Finance LLC 2019-B	.DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000							MMAF Equipment Finance LLC 2021-A	.DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000							Rozier LLC	.DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			04-2443240				MML Management Corporation	.MA	NIA	MM Investment Holding	Ownership	100.000	MMLIC	Y	
.0000			04-3548444				MassMutual International Holding MSC, Inc.	.MA	NIA	MML Management Corporation	Ownership	100.000	MMLIC		
.0000			04-3341767				MassMutual Holding MSC, Inc.	.MA	NIA	MML Management Corporation	Ownership	100.000	MMLIC		
.0000							MML CM LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Blueprint Income LLC	.NY	NIA	MML CM LLC	Ownership	100.000	MMLIC		
.0000							Flourish Digital Assets LLC	.DE	NIA	MML CM LLC	Ownership	100.000	MMLIC		
.0000							Flourish Financial LLC	.DE	NIA	MML CM LLC	Ownership	100.000	MMLIC		
.0000							Flourish Technologies LLC	.DE	NIA	MML CM LLC	Ownership	100.000	MMLIC		
.0000			04-3356880				MML Distributors LLC	.MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-3356880				MML Distributors LLC	.MA	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							MML Investment Advisers, LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			46-3238013				MML Strategic Distributors, LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1563535	2881445			The MassMutual Trust Company, FSB	.CT	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC	Y	
.0000			04-1590850				MML Private Placement Investment Company I, LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Private Equity Fund Investor LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Private Equity Fund Investor LLC	.DE	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000							MM Private Equity Intercontinental LLC	.DE	NIA	MML Private Equity Fund Investor LLC	Ownership	100.000	MMLIC		
.0000			45-2738137				Pioneers Gate LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-2854319	2392316			MassMutual Holding LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC	Y	
.0000			06-1597528				MassMutual Assignment Company	.NC	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			37-1732913				Fern Street LLC	.DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							Sleeper Street LLC	.DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domiciliary Location	Relationship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Required? (Y/N)	*
.0000			46-2252944				Haven Life Insurance Agency, LLC	DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MassMutual Capital Partners LLC	DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures Holding LLC	DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							Athens Fund Management LLC	DE	NIA	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							Crane Venture Partners LLP	GBR	NIA	MassMutual Ventures Holding LLC	Ownership	33.000	MMLIC		
.0000							MassMutual Ventures Management LLC	DE	NIA	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures SEA Management Private Limited	DE	NIA	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures Southeast Asia I LLC	DE	NIA	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures Southeast Asia II LLC	DE	NIA	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures UK LLC	DE	NIA	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000			47-1296410				MassMutual Ventures US I LLC	DE	NIA	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures US II LLC	DE	NIA	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures US III LLC	DE	NIA	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							Open Alternatives LLC	DE	NIA	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MM Rothesay Holdco US LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Rothesay Limited	GBR	NIA	MM Rothesay Holdco US LLC	Ownership	100.000	MMLIC		
.0000							Rothesay Life Plc	GBR	NIA	Rothesay Limited	Ownership	100.000	MMLIC		
.0000							Rothesay MA No.1 Limited	GBR	NIA	Rothesay Life PLC	Ownership	100.000	MMLIC		
.0000							Rothesay MA No.2 Limited	GBR	NIA	Rothesay Life PLC	Ownership	100.000	MMLIC		
.0000							Rothesay MA No.3 Limited	GBR	NIA	Rothesay Life PLC	Ownership	100.000	MMLIC		
.0000							Rothesay MA No.4 Limited	GBR	NIA	Rothesay Life PLC	Ownership	100.000	MMLIC		
.0000							LT Mortgage Finance Limited	GBR	NIA	Rothesay Limited	Ownership	100.000	MMLIC		
.0000							Rothesay Property Partnership 1 LLP	GBR	NIA	Rothesay Limited	Ownership	100.000	MMLIC		
.0000							Rothesay Foundation	GBR	NIA	Rothesay Limited	Ownership	100.000	MMLIC		
.0000							Rothesay Pensions Management Limited	GBR	NIA	Rothesay Limited	Ownership	100.000	MMLIC		
.0000							Rothesay Asset Management UK Limited	GBR	NIA	Rothesay Asset Management UK Limited	Ownership	100.000	MMLIC		
.0000							Rothesay Asset Management Australia Pty Ltd	AUS	NIA	Rothesay Asset Management UK Limited	Ownership	100.000	MMLIC		
.0000							Rothesay Asset Management US LLC	DE	NIA	Rothesay Asset Management UK Limited	Ownership	100.000	MMLIC		
.0000							MM Catalyst Fund LLC	DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			47-1466022				LifeScore Labs, LLC	MA	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Investors Services, LLC	MA	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Insurance Agency, LLC	MA	NIA	MML Investors Services, LLC	Ownership	100.000	MMLIC		
.0000			41-2011634				MMLISI Financial Alliances, LLC	DE	NIA	MML Investors Services, LLC	Ownership	100.000	MMLIC		
.0000			45-4000072				MM Asset Management Holding LLC	DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			51-0504477				Barings LLC	DE	NIA	MassMutual Asset Management Holding LLC	Ownership	100.000	MMLIC		
.0000			98-0524271				Baring Asset Management (Asia) Holdings Limited	HKG	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000			98-0457465				Baring International Fund Managers (Bermuda) Limited	BMU	NIA	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0457463				Baring Asset Management (Asia) Limited	HKG	NIA	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000							Baring Asset Management Korea Limited	KOR	NIA	Baring Asset Management (Asia) Limited	Ownership	100.000	MMLIC		
.0000							Barings Investment Management (Shanghai) Limited	HKG	NIA	Baring Asset Management (Asia) Limited	Ownership	100.000	MMLIC		
.0000							Barings Overseas Investment Fund Management (Shanghai) Limited	HKG	NIA	Baring Asset Management (Asia) Limited	Ownership	100.000	MMLIC		
.0000			98-0457707				Baring SICE (Taiwan) Limited	TWN	NIA	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000							Barings Singapore Pte. Ltd.	SGP	NIA	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0236449				Barings Japan Limited	JPN	NIA	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domiciliary Location	Relationship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Required? (Y/N)	*
.0000							Barings Australia Holding Company Pty Ltd	AUS	NIA	Barings Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0457456				Barings Australia Pty Ltd	AUS	NIA	Barings Australia Holding Company Pty Ltd	Ownership	100.000	MMLIC		
.0000			80-0875475				Barings Finance LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							BCF Europe Funding Limited	IRL	NIA	Barings Finance LLC	Ownership	100.000	MMLIC		
.0000							BCF Senior Funding I LLC	DE	NIA	Barings Finance LLC	Ownership	100.000	MMLIC		
.0000							BCF Senior Funding I Designated Activity Company	IRL	NIA	Barings Finance LLC	Ownership	100.000	MMLIC		
.0000			04-3238351				Barings Securities LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000			98-0437588				Barings Guernsey Limited	GGY	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Europe Limited	GBR	NIA	Barings Guernsey Limited	Ownership	100.000	MMLIC		
.0000							Barings Asset Management Spain SL	ESP	NIA	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings Italy S.r.l.	ITA	NIA	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings Sweden AB	SWI	NIA	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings Finland Oy	FIN	NIA	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings Netherlands B.V.	NLD	NIA	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings Real Estate UK Holdings Limited	DE	NIA	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000			98-0654401				Barings Real Estate Advisers (Continental Europe) Limited	GBR	NIA	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0654388				Barings Real Estate Advisers Europe LLP	GBR	NIA	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-1194368				Barings Real Estate GmbH	DEU	NIA	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0241935				Barings Asset Management Limited	GBR	NIA	MassMutual Holdings (Bermuda) Limited	Ownership	100.000	MMLIC		
.0000							Barings European Direct Lending 1 GP LLP	GBR	NIA	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-1012393				Barings Global Advisors Limited	GBR	NIA	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0457328				Barings International Investment Limited	GBR	NIA	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0457587				Barings International Investment Management Holdings	GBR	NIA	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0457576				Barings Asset Management UK Holdings Limited	GBR	NIA	Barings International Investment Management Holdings	Ownership	100.000	MMLIC		
.0000			98-0465031				Barings Asset Management GmbH	DEU	NIA	Barings Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0524272				Barings International Fund Managers (Ireland) Limited	IRL	NIA	Barings Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000							Barings Asset Management Switzerland Sarl	CHE	NIA	Barings Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0497550				Barings France SAS	FRA	NIA	Barings Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0457586				Barings Fund Managers Limited	GBR	NIA	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000							BCGSS 2 GP LLP	GBR	NIA	Barings Fund Managers Limited	Ownership	100.000	MMLIC		
.0000			98-0457578				Barings Investment Services Limited	GBR	NIA	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings Core Fund Feeder I GP S.a.r.l.	LUX	NIA	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings BME GP S.a.r.l.	GBR	NIA	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings GPC GP S.a.r.l.	LUX	NIA	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings European Core Property Fund GP Sarl	GBR	NIA	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings Investment Fund (LUX) GP S.a.r.l.	LUX	NIA	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings Umbrella Fund (LUX) GP S.a.r.l.	LUX	NIA	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000							GPLF4(S) GP S.a.r.l.	LUX	NIA	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000							PREIF Holdings Limited Partnership	GBR	NIA	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0432153				Barings (U.K.) Limited	GBR	NIA	Barings Guernsey Limited	Ownership	100.000	MMLIC		
.0000							BMC Holdings DE LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-3238351	3456895			Barings Real Estate Advisers Inc.	CA	NIA	Barings Real Estate Advisers LLC	Ownership	100.000	MMLIC		
.0000			81-4258759				CRA Aircraft Holding LLC	DE	NIA	Company	Ownership/Influence	40.000	MMLIC		
.0000			81-4258759				CRA Aircraft Holding LLC	DE	NIA	Barings LLC	Influence		MMLIC		

134

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domi-ciliary Location	Relation-ship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Y/N)	*
.0000			83-0560183				Aland Royalty Holdings LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	26.700	MMLIC		
.0000			83-0560183				Aland Royalty Holdings LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000			82-2932156				GASL Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	11.300	MMLIC		
.0000			46-2344300				Intermodal Holdings II LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	18.000	MMLIC		
.0000			47-3055009				Milestone Acquisition Holding, LLC	DE	NIA	MassMutual Holding LLC	Ownership/Influence	19.800	MMLIC		
.0000			47-3055009				Milestone Acquisition Holding, LLC	DE	NIA	Barings LLC	Influence		MMLIC		
.0000							Novation Companies, Inc.	MD	NIA	Massachusetts Mutual Life Insurance Company	Ownership	16.500	MMLIC		
.0000			46-5460309				Red Lake Ventures, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	31.500	MMLIC		
.0000			46-5460309				Red Lake Ventures, LLC	DE	NIA	Barings LLC	Influence		MMLIC		
.0000			81-4065378				Remington L & W Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	19.900	MMLIC		
.0000			81-4065378				Remington L & W Holdings LLC	DE	NIA	Barings LLC	Influence		MMLIC		
.0000							Tamiami Citrus, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	15.700	MMLIC		
.0000							Teaktree Acquisition, LLC	DE	NIA	MassMutual Holding LLC	Ownership/Influence	14.700	MMLIC		
.0000							Teaktree Acquisition, LLC	DE	NIA	Barings LLC	Influence		MMLIC		
.0000							Techquity, LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	15.600	MMLIC		
.0000							Techquity, LP	DE	NIA	Barings LLC	Influence		MMLIC		
.0000			46-0687392				Validus Holdings Company LLC	DE	NIA	Barings LLC	Ownership	40.400	MMLIC		
.0000							Validus Pharmaceuticals LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	70.000	MMLIC		
.0000							VGS Acquisition Holding, LLC	DE	NIA	MassMutual Holding LLC	Ownership/Influence	33.300	MMLIC		
.0000							VGS Acquisition Holding, LLC	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Aland Royalty GP, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Alaska Future Fund GP, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							BAI GP, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							BAI Funds SLP, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Baring Asset-Based Income Fund (US) GP, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings CMS Fund GP, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Hotel Opportunity Venture I GP, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Investment Series LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Emerging Generation Fund GP, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings ERS PE Emerging Manager III GP, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Global Investment Funds (U.S.) Management LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Barings CLO Investment Partners GP, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Core Property Fund GP LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Direct Lending GP Ltd.	CY	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Emerging Generation Fund LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	66.600	MMLIC		
.0000			84-3784245				Barings Emerging Generation Fund LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000			84-3784245				Barings Global Energy Infrastructure Advisors, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings North American Private Loan Fund Management, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings North American Private Loan Fund Management II, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Global Real Assets Fund GP, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domi-ciliary Location	Relation-ship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Y/N)	*
.0000							Barings GPSP	DE	NIA	Barings LLC Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			84-5063008				Barings Small Business Fund LLC	DE	NIA	Barings LLC	Ownership	32.900	MMLIC		
.0000			84-5063008				Barings Small Business Fund LLC	DE	NIA	Barings LLC	Management		MMLIC		
.0000			98-0536233				Benton Street Advisors, Inc.	CYM	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							BHOVI Incentive LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							BIG Real Estate Fund GP LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							BRECS VII GP LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							BREDIF GP LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							CHY Venture GP LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							CREF X GP LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Great Lakes III GP, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Lake Jackson LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Loan Strategies Management LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000			41-2280126				Mezzco III LLC	DE	NIA	Barings LLC	Ownership	99.300	MMLIC		
.0000			80-0920285				Mezzco IV LLC	DE	NIA	Barings LLC	Ownership	99.300	MMLIC		
.0000							Mezzco Australia II LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							RECSEA-NY GP LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				SBNP SIA II LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							SBNP SIA III LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Somerset Special Opportunities Management LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Amherst Long Term Holdings, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	24.500	MMLIC		
.0000			04-3313782				MassMutual International LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC	Y	
.0000							MassMutual Solutions LLC	DE	NIA	MassMutual International LLC	Ownership	100.000	MMLIC		
.0000							Haven Technologies Asia Limited	HKG	NIA	MassMutual International LLC	Ownership	100.000	MMLIC		
.0000							Yunfeng Financial Group Limited	HKG	NIA	MassMutual International LLC	Ownership	24.900	MMLIC		
.0000							MassMutual Asia Limited (SPV)	HKG	NIA	MassMutual International LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Mezzanine Investor II, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Mezzanine Investor III, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	11.100	MMLIC		
.0000			27-3576835				MassMutual External Benefits Group LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				100 w. 3rd Street LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				2160 Grand Manager LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	98.100	MMLIC		
.0000			82-2432216				300 South Tryon Hotel LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				300 South Tryon LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Almack Mezzanine Fund II Unleveraged LP	GBR	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	72.900	MMLIC		
.0000							Barings Affordable Housing Mortgage Fund I LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Barings Affordable Housing Mortgage Fund I LLC	DE	NIA	Barings LLC	Management		MMLIC		
.0000			61-1902329				Barings Affordable Housing Mortgage Fund II LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			61-1902329				Barings Affordable Housing Mortgage Fund II LLC	DE	NIA	Barings LLC	Management		MMLIC		



STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

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.0000			85-3036663				Barings Affordable Housing Mortgage Fund III LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			85-3036663				Barings Affordable Housing Mortgage Fund III LLC	DE	NIA	Barings LLC	Management		MMLIC		
.0000			36-4868350				Barings Asset-Based Income Fund (US) LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	12.300	MMLIC		
.0000			36-4868350				Barings Asset-Based Income Fund (US) LP	DE	NIA	C.M. Life Insurance Company	Ownership/Influence	1.200	MMLIC		
.0000			36-4868350				Barings Asset-Based Income Fund (US) LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Emerging Markets Corporate Bond Fund	IRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	71.600	MMLIC		
.0000							Barings Emerging Markets Corporate Bond Fund	IRL	NIA	Barings LLC	Management		MMLIC		
.0000							Barings European Real Estate Debt Income Fund	LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MMLIC		
.0000							Barings European Real Estate Debt Income Fund	LUX	NIA	Barings LLC	Influence		MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	34.300	MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	DE	NIA	C.M. Life Insurance Company	Ownership	2.200	MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	DE	NIA	Barings LLC	Management		MMLIC		
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	75.700	MMLIC		
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	3.800	MMLIC		
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings US High Yield Bond Fund	IRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	57.200	MMLIC		
.0000							Barings US High Yield Bond Fund	IRL	NIA	Barings LLC	Management		MMLIC		
.0000							Babson CLO Ltd. 2013-I	CYM	NIA	Barings LLC	Influence		MMLIC		3
.0000							Babson CLO Ltd. 2014-I	CYM	NIA	Barings LLC	Influence		MMLIC		2
.0000							Babson CLO Ltd. 2015-I	CYM	NIA	Barings LLC	Influence		MMLIC		4
.0000							Babson CLO Ltd. 2015-II	CYM	NIA	Barings LLC	Influence		MMLIC		5
.0000							Babson CLO Ltd. 2016-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson CLO Ltd. 2016-II	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO Ltd. 2017-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2018-III	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2018-IV	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000			98-1473665				Barings CLO 2019-II	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2019-III	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2019-IV	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2020-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2020-II	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2020-III	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2020-IV	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2021-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2021-II	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson Euro CLO 2014-I BV	NLD	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson Euro CLO 2014-II BV	NLD	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson Euro CLO 2015-I BV	NLD	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson Euro CLO 2016-I BV	NLD	NIA	Barings LLC	Influence		MMLIC		
.0000			36-037260H				Barings Euro CLO 2019-I BV	IRL	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings Euro CLO 2019-II BV	IRL	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings Euro CLO 2020-I DAC	IRL	NIA	Barings LLC	Influence		MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domiciliary Location	Relationship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Required? (Y/N)	*
.0000			37-15576VH				Barings Euro CLO 2021-I DAC	IRL	NIA	Barings LLC	Influence		MMLIC		
.0000			81-0841854				Barings CLO Investment Partners LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	99.300	MMLIC		
.0000			81-0841854				Barings CLO Investment Partners LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Euro Value Add II (BREEVA II)	LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	62.800	MMLIC		
.0000							Barings Euro Value Add II (BREEVA II)	LUX	NIA	C.M. Life Insurance Company	Ownership	5.500	MMLIC		
.0000							Barings Euro Value Add II (BREEVA II)	LUX	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Real Estate European Value Add I SCSp	GBR	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	41.200	MMLIC		
.0000							Barings Real Estate European Value Add I SCSp	GBR	NIA	C.M. Life Insurance Company	Ownership	4.600	MMLIC		
.0000							Barings Real Estate European Value Add I SCSp	GBR	NIA	Barings LLC	Management		MMLIC		
.0000			85-3449260				Barings Real Estate Debt Income Fund LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MMLIC		
.0000			85-3449260				Barings Real Estate Debt Income Fund LP	DE	NIA	C.M. Life Insurance Company	Ownership		MMLIC		
.0000			85-3449260				Barings Real Estate Debt Income Fund LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000			82-5330194				Barings Global Em. Markets Equity Fund	NC	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Energy Infrastructure Fund I LP	CYM	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	99.200	MMLIC		
.0000			98-1332384				Barings Global Energy Infrastructure Fund I LP	CYM	NIA	Barings Asset Management Limited	Management		MMLIC		
.0000							Barings Global Dividends Champion Fund	IRL	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Inv. Grade Strat Fund	IRL	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Private Loan Fund	LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	10.500	MMLIC		
.0000							Barings Global Private Loan Fund	LUX	NIA	Barings LLC	Management		MMLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	41.700	MMLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP	DE	NIA	C.M. Life Insurance Company	Ownership	7.400	MMLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Special Situations Credit Fund 3	IRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	17.900	MMLIC		
.0000							Barings Global Special Situations Credit 4 Delaware	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	70.400	MMLIC		
.0000							Barings Global Special Situations Credit 4 Delaware	DE	NIA	C.M. Life Insurance Company	Ownership	3.700	MMLIC		
.0000							Barings Global Special Situations Credit 4 Delaware	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Special Situations Credit 4 LUX	LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership	16.000	MMLIC		
.0000							Barings Global Special Situations Credit 4 LUX	LUX	NIA	C.M. Life Insurance Company	Ownership	0.900	MMLIC		
.0000							Barings Global Special Situations Credit 4 LUX	LUX	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Special Situations Credit Fund 3	IRL	NIA	Barings LLC	Management		MMLIC		
.0000			87-0977058				Barings Hotel Opportunity Venture	CT	NIA	Barings LLC	Ownership/Influence	100.000	MMLIC		
.0000			87-0977058				Barings Hotel Opportunity Venture	CT	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Middle Market CLO 2017-I Ltd & LLC	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings Middle Market CLO 2018-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings Middle Market CLO 2019-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000			98-1612604				Barings Middle Market CLO Ltd 2021-I	CYM	NIA	Barings LLC	Influence		MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domiciliary Location	Relationship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Required? (Y/N)	*
.0000			38-4010344				Barings North American Private Loan Fund LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	42.400	MMLIC		
.0000			38-4010344				Barings North American Private Loan Fund LP	DE	NIA	Barings Asset Management Limited	Management		MMLIC		
.0000			98-1332384				Barings RE Credit Strategies VII LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	33.800	MMLIC		
.0000			98-1332384				Barings RE Credit Strategies VII LP	DE	NIA	Barings Asset Management Limited	Management		MMLIC		
.0000							Braemar Energy Ventures I, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	89.700	MMLIC		
.0000							Braemar Energy Ventures I, L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	1.300	MMLIC		
.0000							Braemar Energy Ventures I, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings European Core Property Fund SCSp	LUX	NIA	MassMutual Holding LLC	Ownership/Influence	9.200	MMLIC		
.0000							Barings European Core Property Fund SCSp	LUX	NIA	C.M. Life Insurance Company	Ownership	0.600	MMLIC		
.0000							Barings European Core Property Fund SCSp	LUX	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			38-4059932				Benchmark 2018-B2 Mortgage Trust	NY	NIA	Barings LLC	Influence		MMLIC		
.0000							Benchmark 2018-B4	NY	NIA	Barings LLC	Influence		MMLIC		
.0000			38-4096530				Benchmark 2018-B8	NY	NIA	Barings LLC	Influence		MMLIC		
.0000			20-5578089				Barings Core Property Fund LP	DE	NIA	MassMutual Holding LLC	Ownership/Influence	20.900	MMLIC		
.0000			20-5578089				Barings Core Property Fund LP	DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	25.300	MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	C.M. Life Insurance Company	Ownership	2.800	MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			35-2531693				Cornerstone Permanent Mortgage Fund III LLC	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MMLIC		
.0000			61-1793735				Cornerstone Permanent Mortgage Fund IV LLC	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Eclipse Business Capital Holdings	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	6.700	MMLIC		
.0000							Eclipse Business Capital Holdings	DE	NIA	Barings LLC	Management		MMLIC		
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	32.000	MMLIC		
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	DE	NIA	C.M. Life Insurance Company	Ownership	4.800	MMLIC		
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000			37-1708623				Great Lakes III, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	41.400	MMLIC		
.0000			37-1708623				Great Lakes III, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000							GIA EU Holdings - Emerson JV Sarl	LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	60.100	MMLIC		
.0000							GIA EU Holdings - Emerson JV Sarl	LUX	NIA	Barings LLC	Management		MMLIC		
.0000			38-4041011				JPIMCC Commercial Mortgage Securities Trust 2017-JP7	NY	NIA	Barings LLC	Influence		MMLIC		
.0000			38-4032059				JPIMDB Commercial Mortgage Securities Trust 2017-C5	NY	NIA	Barings LLC	Influence		MMLIC		
.0000			82-1512591				KKR-MM Vector LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MMLIC		
.0000			46-4255307				Marco Hotel LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				Miami Douglas One GP LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			04-1590850				Miami Douglas One GP LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.500	MMLIC		
.0000			04-1590850				Miami Douglas Two GP LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			04-1590850				Miami Douglas Two GP LLC	DE	NIA	C.M. Life Insurance Company	Ownership	0.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE Y**  
**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domi-ciliary Location	Relation-ship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Y/N)	*
.0000			04-1590850				Miami Douglas One LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MMLIC		
.0000			04-1590850				Miami Douglas One LP	DE	NIA	C.M. Life Insurance Company	Ownership	10.000	MMLIC		
.0000			04-1590850				Miami Douglas Two LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MMLIC		
.0000			04-1590850				MM BIG Peninsula Co-Invest Member LLC	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	91.300	MMLIC		
.0000			04-1590850				MM BIG Peninsula Co-Invest Member LLC	MA	NIA	C.M. Life Insurance Company	Ownership	3.000	MMLIC		
.0000			85-3886824				NVDIG Digital Assets Fund II LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				Miami Douglas Two LP	DE	NIA	C.M. Life Insurance Company	Ownership	0.000	MMLIC		
.0000			45-3623262				HB Naples Golf Owner LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MM CM Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			81-3000420				MM Debt Participations LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MMLIC		
.0000			81-3000420				MM Debt Participations LLC	DE	NIA	Barings LLC	Management		MMLIC		
.0000			82-4411267				RB Apartments LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			75-2901061				Reston Arboretum LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			20-8856877				Somerset Special Opportunities Fund L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	40.100	MMLIC		
.0000			20-8856877				Somerset Special Opportunities Fund L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	1.900	MMLIC		
.0000			04-1590850				SouthPointe Industrial LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000			35-2553915				Ten Fan Pier Boulevard LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			41-2280127				Tower Square Capital Partners III, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			41-2280127				Tower Square Capital Partners III, L.P.	DE	NIA	MassMutual Holding LLC	Ownership/Influence	16.500	MMLIC		
.0000			41-2280129				Tower Square Capital Partners IIIA, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	91.000	MMLIC		
.0000			41-2280129				Tower Square Capital Partners IIIA, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			04-1590850				Trailside MM Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	59.600	MMLIC		
.0000			04-1590850				Trailside MM Member LLC	DE	NIA	C.M. Life Insurance Company	Ownership	7.400	MMLIC		
.0000			83-1325764				Washington Gateway Two LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	88.700	MMLIC		
.0000			83-1325764				Washington Gateway Two LLC	DE	NIA	C.M. Life Insurance Company	Ownership	6.700	MMLIC		
.0000			32-0574045				Washington Gateway Three LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	83.700	MMLIC		
.0000			32-0574045				Washington Gateway Three LLC	DE	NIA	C.M. Life Insurance Company	Ownership	11.400	MMLIC		
.0000			04-1590850				West 46th Street Hotel LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Babson Capital Loan Strategies Master Fund LP	CYM	NIA	Barings LLC	Management		MMLIC		
.0000							Barings China Aggregate Bond Private Securities Investment Fund	CHN	NIA	Barings LLC	Management		MMLIC		
.0000							Barings European Growth Trust Fund	GBR	NIA	Barings LLC	Ownership/Influence	20.900	MMLIC		
.0000			47-3790192				Barings Global High Yield Fund	MA	NIA	Barings LLC	Management		MMLIC		
.0000							CCIC Fund	CHN	NIA	Barings LLC	Ownership/Influence	55.600	MMLIC		
.0000			71-1018134				Great Lakes II LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	10.600	MMLIC		
.0000			71-1018134				Great Lakes II LLC	DE	NIA	C.M. Life Insurance Company	Ownership	0.100	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

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.0000			04-1590850				Wood Creek Venture Fund LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	40.000	MMLIC		
.0000			36-4823011				50 Liberty LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	65.000	MMLIC		
.0000			36-4823011				50 Liberty LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.800	MMLIC		
.0000			87-0977058				Barings Hotel Opportunity Ventures	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	50.000	MMLIC		
.0000							Barings California Mortgage Fund IV	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Barings Umbrella Fund LUX SCSp SICAV RAIF	LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership	26.100	MMLIC		
.0000							Barings Umbrella Fund LUX SCSp SICAV RAIF	LUX	NIA	C.M. Life Insurance Company	Ownership	2.300	MMLIC		
.0000			82-2285211				Calgary Railway Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MMLIC		
.0000			82-2285211				Calgary Railway Holding LLC	DE	NIA	C.M. Life Insurance Company	Ownership	10.000	MMLIC		
.0000			82-3307907				Cornbrook PRS Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			95-4207717				Cornerstone California Mortgage Fund I LLC	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			95-4207717				Cornerstone California Mortgage Fund II LLC	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			95-4207717				Cornerstone California Mortgage Fund III LLC	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			56-2630592				Cornerstone Fort Pierce Development LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MMLIC		
.0000			56-2630592				Cornerstone Fort Pierce Development LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.900	MMLIC		
.0000			45-2632610				Cornerstone Permanent Mortgage Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			45-2632610				Cornerstone Permanent Mortgage Fund	MA	NIA	Barings LLC	Management		MMLIC		
.0000			61-1750537				Cornerstone Permanent Mortgage Fund II	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			61-1750537				Cornerstone Permanent Mortgage Fund II	MA	NIA	Barings LLC	Management		MMLIC		
.0000			61-1793735				Cornerstone Permanent Mortgage Fund IV	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			81-0890084				CREA Madison Member LLC	DE	NIA	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000			20-0348173				CREA/PPC Venture LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			82-2783393				Danville Riverwalk Venture, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	94.400	MMLIC		
.0000			20-3347091				Fan Pier Development LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	66.200	MMLIC		
.0000			20-3347091				Fan Pier Development LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.900	MMLIC		
.0000			04-1590850				GIA EU Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			81-5360103				Landmark Manchester Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MM Island Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	49.000	MMLIC		
.0000			83-0881588				NoHo West Venture LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	94.800	MMLIC		
.0000			80-0948028				One Harbor Shore LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	76.000	MMLIC		
.0000			80-0948028				One Harbor Shore LLC	DE	NIA	C.M. Life Insurance Company	Ownership	6.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

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.0000			04-1590850				PACO France Logistics LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			82-3393166				Portland 400 Sixth Manager LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MMLIC		
.0000							Raleigh Crossing Phase I Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MMLIC		
.0000							Salomon Brothers Commercial Mortgage Trust 2001-MM	DE	NIA	Barings Real Estate Advisers LLC	Influence		MMLIC		
.0000			27-2977720				Sawgrass Village Shopping Center LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	84.200	MMLIC		
.0000			27-2977720				Sawgrass Village Shopping Center LLC	DE	NIA	C.M. Life Insurance Company	Ownership	15.800	MMLIC		
.0000							STOA Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	50.000	MMLIC		
.0000			81-5273574				Three PW Office Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.100	MMLIC		
.0000			35-2484550				Twenty Two Liberty LLC	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	65.000	MMLIC		
.0000			35-2484550				Twenty Two Liberty LLC	MA	NIA	C.M. Life Insurance Company	Ownership	35.000	MMLIC		
.0000			82-3250684				Unna, Dortmund Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			45-5401109				Washington Gateway Apartments Venture LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.700	MMLIC		
.0000			45-5401109				Washington Gateway Apartments Venture LLC	DE	NIA	C.M. Life Insurance Company	Ownership	4.800	MMLIC		
.0000					0000927972	00	MassMutual Premier Main Street Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	91.900	MMLIC		
.0000					0000927972	00	MassMutual Premier Strategic Emerging Markets Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	4.100	MMLIC		
.0000					01-0821120	00	MassMutual Select Diversified Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.800	MMLIC		
.0000					04-3512593	00	MassMutual Select Fundamental Growth Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	2.900	MMLIC		
.0000					42-1710935	00	MassMutual Select Mid-Cap Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	23.800	MMLIC		
.0000					02-0769954	00	MassMutual Select Small Capital Value Equity Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000					04-3584140	00	MassMutual Select Small Company Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	10.900	MMLIC		
.0000					82-3347422	00	MassMutual Select T. Rowe Price Retirement 2005 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	7.200	MMLIC		
.0000					82-3355639	00	MassMutual Select T. Rowe Price Retirement 2010 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000					82-3382389	00	MassMutual Select T. Rowe Price Retirement 2015 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000					82-3396442	00	MassMutual Select T. Rowe Price Retirement 2020 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000					82-3417420	00	MassMutual Select T. Rowe Price Retirement 2025 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000					82-3430358	00	MassMutual Select T. Rowe Price Retirement 2030 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000					82-3439837	00	MassMutual Select T. Rowe Price Retirement 2035 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000					82-3451779	00	MassMutual Select T. Rowe Price Retirement 2040 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domiciliary Location	Relationship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Required? (Y/N)	*
.0000			82-3472295		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2045 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3481715		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2050 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3502011		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2055 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3525148		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2060 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3533944		0000916053	OQ	MassMutual Select T. Rowe Price Retirement Balanced Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			46-4257056				MML Series International Equity Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			47-3517233				MML Series II Asset Momentum Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			47-3529636				MML Series II Dynamic Bond Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			47-3544629				MML Series II Equity Rotation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.100	MMLIC		
.0000			47-3559064				MML Series II Special Situations Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	97.300	MMLIC		
.0000			27-1933389		0000916053	OQ	MassMutual RetireSMART 2035 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	3.000	MMLIC		
.0000			27-1932769		0000916053	OQ	MassMutual RetireSMART 2045 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	8.000	MMLIC		
.0000			46-3289207		0000916053	OQ	MassMutual RetireSMART 2055 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	24.100	MMLIC		
.0000			47-5326235		0000916053	OQ	MassMutual RetireSMART 2060 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	53.100	MMLIC		
.0000			45-1618155		0000916053	OQ	MassMutual 20/80 Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			45-1618222		0000916053	OQ	MassMutual 80/20 Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			03-0532464		0000916053	OQ	MassMutual RetireSMART In Retirement Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	1.700	MMLIC		
.0000			45-1618262		0000916053	OQ	MassMutual 40/60 Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			45-1618046		0000916053	OQ	MassMutual 60/40 Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		

Asterisk	Explanation
1	Massachusetts Mutual Life Insurance Company owns 14.23% of the affiliated debt of Jefferies Finance LLC
2	Debt investors own .6% and includes only Great Lakes III, L.P.
3	Debt investors own 9.6% and includes only Babson Capital Loan Strategies Fund, L.P.
4	Debt investors own .5% and includes only Great Lakes III, L.P.
5	Debt investors own .2% and includes only Great Lakes III, L.P.

# SUPPLEMENTAL EXHIBITS AND SCHEDULES INTERROGATORIES

The following supplemental reports are required to be filed as part of your statement filing. However, in the event that your company does not transact the type of business for which the special report must be filed, your response of NO to the specific interrogatory will be accepted in lieu of filing a "NONE" report and a bar code will be printed below. If the supplement is required of your company but is not being filed for whatever reason enter SEE EXPLANATION and provide an explanation following the interrogatory questions.

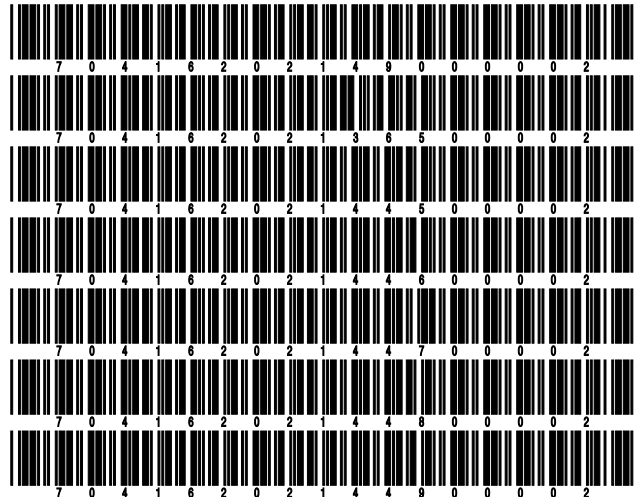
	Response
1. Will the Trusteed Surplus Statement be filed with the state of domicile and the NAIC with this statement? .....	NO
2. Will the Medicare Part D Coverage Supplement be filed with the state of domicile and the NAIC with this statement? .....	NO
3. Will the Reasonableness of Assumptions Certification required by Actuarial Guideline XXXV be filed with the state of domicile and electronically with the NAIC? .....	NO
4. Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXV be filed with the state of domicile and electronically with the NAIC? .....	NO
5. Will the Reasonableness of Assumptions Certification for Implied Guaranteed Rate Method required by Actuarial Guideline XXXVI be filed with the state of domicile and electronically with the NAIC? .....	NO
6. Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI (Updated Average Market Value) be filed with the state of domicile and electronically with the NAIC? .....	NO
7. Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI (Updated Market Value) be filed with the state of domicile and electronically with the NAIC? .....	NO
8. Will the Life PBR Statement of Exemption be filed with the state of domicile by July 1st and electronically with the NAIC with the second quarterly filing per the Valuation Manual (by August 15)? (2nd Quarter Only) The response for 1st and 3rd quarters should be N/A. A NO response resulting with a bar code is only appropriate in the 2nd quarter. ....	N/A

Explanation:

1. Not required.
2. This line of business is not written by the company.
3. Not required.
4. Not required.
5. Not required.
6. Not required.
7. Not required.

Bar Code:

1. Trusteed Surplus Statement [Document Identifier 490]
2. Medicare Part D Coverage Supplement [Document Identifier 365]
3. Reasonableness of Assumptions Certification required by Actuarial Guideline XXXV [Document Identifier 445]
4. Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXV [Document Identifier 446]
5. Reasonableness of Assumptions Certification for Implied Guaranteed Rate Method required by Actuarial Guideline XXXVI [Document Identifier 447]
6. Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI [Document Identifier 448]
7. Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI (Updated Market Value) [Document Identifier 449]





**OVERFLOW PAGE FOR WRITE-INS**

**NONE**

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE A - VERIFICATION**

Real Estate

	1 Year to Date	2 Prior Year Ended December 31
1. Book/adjusted carrying value, December 31 of prior year .....		
2. Cost of acquired:		
2.1 Actual cost at time of acquisition .....		
2.2 Additional investment made after acquisition .....		
3. Current year change in encumbrances .....		
4. Total gain (loss) on disposals .....		
5. Deduct amounts received on disposals .....		
6. Total foreign exchange change in book/adjusted carrying value .....		
7. Deduct current year's other than temporary impairment recognized .....		
8. Deduct current year's depreciation .....		
9. Book/adjusted carrying value at the end of current period (Lines 1+2+3+4-5+6-7-8) .....		
10. Deduct total nonadmitted amounts .....		
11. Statement value at end of current period (Line 9 minus Line 10)		

**NONE**

**SCHEDULE B - VERIFICATION**

Mortgage Loans

	1 Year to Date	2 Prior Year Ended December 31
1. Book value/recorded investment excluding accrued interest, December 31 of prior year .....	2,090,393	2,358,494
2. Cost of acquired:		
2.1 Actual cost at time of acquisition .....		
2.2 Additional investment made after acquisition .....	609	951
3. Capitalized deferred interest and other .....		
4. Accrual of discount .....	(5,729)	1,302
5. Unrealized valuation increase (decrease) .....		
6. Total gain (loss) on disposals .....		
7. Deduct amounts received on disposals .....	229,112	262,098
8. Deduct amortization of premium and mortgage interest points and commitment fees .....	(3,921)	8,256
9. Total foreign exchange change in book value/recorded investment excluding accrued interest .....		
10. Deduct current year's other than temporary impairment recognized .....		
11. Book value/recorded investment excluding accrued interest at end of current period (Lines 1+2+3+4+5+6-7-8+9-10) .....	1,860,082	2,090,393
12. Total valuation allowance .....		
13. Subtotal (Line 11 plus Line 12) .....	1,860,082	2,090,393
14. Deduct total nonadmitted amounts .....		
15. Statement value at end of current period (Line 13 minus Line 14)	1,860,082	2,090,393

**SCHEDULE BA - VERIFICATION**

Other Long-Term Invested Assets

	1 Year to Date	2 Prior Year Ended December 31
1. Book/adjusted carrying value, December 31 of prior year .....		
2. Cost of acquired:		
2.1 Actual cost at time of acquisition .....		
2.2 Additional investment made after acquisition .....		
3. Capitalized deferred interest and other .....		
4. Accrual of discount .....		
5. Unrealized valuation increase (decrease) .....		
6. Total gain (loss) on disposals .....		
7. Deduct amounts received on disposals .....		
8. Deduct amortization of premium and depreciation .....		
9. Total foreign exchange change in book/adjusted carrying value .....		
10. Deduct current year's other than temporary impairment recognized .....		
11. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5+6-7-8+9-10) .....		
12. Deduct total nonadmitted amounts .....		
13. Statement value at end of current period (Line 11 minus Line 12)		

**NONE**

**SCHEDULE D - VERIFICATION**

Bonds and Stocks

	1 Year to Date	2 Prior Year Ended December 31
1. Book/adjusted carrying value of bonds and stocks, December 31 of prior year .....	243,446,731	306,408,829
2. Cost of bonds and stocks acquired .....	5,071,411	13,906,404
3. Accrual of discount .....	393,634	576,247
4. Unrealized valuation increase (decrease) .....	(116,566)	(177,444)
5. Total gain (loss) on disposals .....	761,158	742,092
6. Deduct consideration for bonds and stocks disposed of .....	27,999,823	77,749,313
7. Deduct amortization of premium .....	200,052	247,076
8. Total foreign exchange change in book/adjusted carrying value .....		
9. Deduct current year's other than temporary impairment recognized .....	8,105	73,067
10. Total investment income recognized as a result of prepayment penalties and/or acceleration fees .....	2,645	60,059
11. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9+10) .....	221,351,033	243,446,731
12. Deduct total nonadmitted amounts .....		
13. Statement value at end of current period (Line 11 minus Line 12)	221,351,033	243,446,731

STATEMENT AS OF SEPTEMBER 30, 2021 OF THE MML Bay State Life Insurance Company

**SCHEDULE D - PART 1B**

Showing the Acquisitions, Dispositions and Non-Trading Activity  
During the Current Quarter for all Bonds and Preferred Stock by NAIC Designation

NAIC Designation	1 Book/Adjusted Carrying Value Beginning of Current Quarter	2 Acquisitions During Current Quarter	3 Dispositions During Current Quarter	4 Non-Trading Activity During Current Quarter	5 Book/Adjusted Carrying Value End of First Quarter	6 Book/Adjusted Carrying Value End of Second Quarter	7 Book/Adjusted Carrying Value End of Third Quarter	8 Book/Adjusted Carrying Value December 31 Prior Year
<b>BONDS</b>								
1. NAIC 1 (a) .....	218,775,644	33,998,382	94,314,827	1,424,890	189,850,724	218,775,644	159,884,089	201,275,220
2. NAIC 2 (a) .....	121,698,563	297,990,467	225,596,969	(1,533,665)	143,197,849	121,698,563	192,558,396	121,327,818
3. NAIC 3 (a) .....	15,734,015		2,045,074	596,198	19,563,192	15,734,015	14,285,139	20,054,570
4. NAIC 4 (a) .....	3,565,971			300,716	4,989,306	3,565,971	3,866,687	5,147,267
5. NAIC 5 (a) .....	916,754		26,316	(422,787)	904,701	916,754	467,651	492,530
6. NAIC 6 (a) .....	644,415		4,641	(384,963)	284,084	644,415	254,811	697,083
7. Total Bonds	361,335,362	331,988,849	321,987,827	(19,611)	358,789,856	361,335,362	371,316,773	348,994,488
<b>PREFERRED STOCK</b>								
8. NAIC 1 .....								
9. NAIC 2 .....								
10. NAIC 3 .....								
11. NAIC 4 .....								
12. NAIC 5 .....								
13. NAIC 6 .....								
14. Total Preferred Stock								
15. Total Bonds and Preferred Stock	361,335,362	331,988,849	321,987,827	(19,611)	358,789,856	361,335,362	371,316,773	348,994,488

(a) Book/Adjusted Carrying Value column for the end of the current reporting period includes the following amount of short-term and cash equivalent bonds by NAIC designation:

NAIC 1 \$ 39,494,200 ; NAIC 2 \$ 110,483,225 ; NAIC 3 \$ ; NAIC 4 \$ ; NAIC 5 \$ ; NAIC 6 \$

S102

**SCHEDULE DA - PART 1**

## Short-Term Investments

	1	2	3	4	5
	Book/Adjusted Carrying Value	Par Value	Actual Cost	Interest Collected Year-to-Date	Paid for Accrued Interest Year-to-Date
9199999 Totals	55,982,868	xxx	55,957,135		

**SCHEDULE DA - VERIFICATION**

## Short-Term Investments

	1	2
	Year To Date	Prior Year Ended December 31
1. Book/adjusted carrying value, December 31 of prior year .....	56,062,226	39,069,944
2. Cost of short-term investments acquired .....	97,426,065	167,417,143
3. Accrual of discount .....	94,447	468,152
4. Unrealized valuation increase (decrease) .....		
5. Total gain (loss) on disposals .....	(8)	4,944
6. Deduct consideration received on disposals .....	97,599,862	150,897,957
7. Deduct amortization of premium .....		
8. Total foreign exchange change in book/adjusted carrying value .....		
9. Deduct current year's other than temporary impairment recognized .....		
10. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9) .....	55,982,868	56,062,226
11. Deduct total nonadmitted amounts .....		
12. Statement value at end of current period (Line 10 minus Line 11)	55,982,868	56,062,226

Schedule DB - Part A - Verification - Options, Caps, Floors, Collars, Swaps and Forwards

**N O N E**

Schedule DB - Part B - Verification - Futures Contracts

**N O N E**

Schedule DB - Part C - Section 1 - Replication (Synthetic Asset) Transactions (RSATs) Open

**N O N E**

Schedule DB-Part C-Section 2-Reconciliation of Replication (Synthetic Asset) Transactions Open

**N O N E**

Schedule DB - Verification - Book/Adjusted Carrying Value, Fair Value and Potential Exposure of  
Derivatives

**N O N E**

**SCHEDULE E - PART 2 - VERIFICATION**

(Cash Equivalents)

	1	2
	Year To Date	Prior Year Ended December 31
1. Book/adjusted carrying value, December 31 of prior year .....	49,485,532	21,669,593
2. Cost of cash equivalents acquired .....	664,320,545	980,129,573
3. Accrual of discount .....	87,548	
4. Unrealized valuation increase (decrease) .....		575,818
5. Total gain (loss) on disposals .....	125	2,626
6. Deduct consideration received on disposals .....	619,899,193	952,892,078
7. Deduct amortization of premium .....		
8. Total foreign exchange change in book/adjusted carrying value .....		
9. Deduct current year's other than temporary impairment recognized .....		
10. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9) .....	93,994,557	49,485,532
11. Deduct total nonadmitted amounts .....		
12. Statement value at end of current period (Line 10 minus Line 11)	93,994,557	49,485,532