



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

QUARTERLY STATEMENT

AS OF SEPTEMBER 30, 2022

OF THE CONDITION AND AFFAIRS OF THE

MML Bay State Life Insurance Company

NAIC Group Code04350435NAIC Company Code70416Employer's ID Number43-0581430

(Current)(Prior)

Organized under the Laws ofConnecticut, State of Domicile or Port of EntryCT

Country of DomicileUnited States of America

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

Incorporated/Organized04/01/1935Commenced Business07/01/1894

Statutory Home Office100 Bright Meadow BoulevardEnfield, CT, US 06082

(Street and Number)(City or Town, State, Country and Zip Code)

Main Administrative Office1295 State Street

(Street and Number)

Springfield, MA, US 01111413-788-8411

(City or Town, State, Country and Zip Code)(Area Code) (Telephone Number)

Mail Address1295 State StreetSpringfield, MA, US 01111

(Street and Number or P.O. Box)(City or Town, State, Country and Zip Code)

Primary Location of Books and Records1295 State Street

(Street and Number)

Springfield, MA, US 01111413-788-8411

(City or Town, State, Country and Zip Code)(Area Code) (Telephone Number)

Internet Website Addresswww.massmutual.com

Statutory Statement ContactTrevor Wade Gordon617-695-4321

(Name)(Area Code) (Telephone Number)

tgordon@MassMutual.com413-226-4086

(E-mail Address)(FAX Number)

OFFICERS

President and Chief Executive OfficerRoger William Crandall

TreasurerJulieta Giselle Sinisgalli

SecretaryAkintokunbo AkinbajoAppointed ActuaryVy 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 ofMassachusetts

County ofHampden

SS:

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 CrandallPresident and Chief Executive Officer

Akintokunbo AkinbajoSecretary

Julieta Giselle SinisgalliTreasurer

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, 2022 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	213,960,018		213,960,018	218,728,243
2. Stocks:				
2.1 Preferred stocks				
2.2 Common stocks	16,395		16,395	12,060
3. Mortgage loans on real estate:				
3.1 First liens	1,592,701		1,592,701	1,771,148
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 (\$(53,667,463)), cash equivalents (\$159,659,900) and short-term investments (\$)	105,992,437		105,992,437	121,099,505
6. Contract loans (including \$ premium notes)	94,060,724		94,060,724	90,670,570
7. Derivatives				
8. Other invested assets				
9. Receivables for securities				
10. Securities lending reinvested collateral assets				
11. Aggregate write-ins for invested assets				
12. Subtotals, cash and invested assets (Lines 1 to 11)	415,622,274		415,622,274	432,281,526
13. Title plants less \$ charged off (for Title insurers only)				
14. Investment income due and accrued	4,396,136		4,396,136	3,846,398
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)	(3,959,358)		(3,959,358)	(3,803,929)
15.3 Accrued retrospective premiums (\$) and contracts subject to redetermination (\$)				
16. Reinsurance:				
16.1 Amounts recoverable from reinsurers	79,124,577		79,124,577	7,715,214
16.2 Funds held by or deposited with reinsured companies				
16.3 Other amounts receivable under reinsurance contracts	26,949,236		26,949,236	41,218,338
17. Amounts receivable relating to uninsured plans				
18.1 Current federal and foreign income tax recoverable and interest thereon				4,164,238
18.2 Net deferred tax asset	2,976,989	1,130,381	1,846,608	1,811,579
19. Guaranty funds receivable or on deposit	111,873		111,873	118,464
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	142,651		142,651	203,186
24. Health care (\$) and other amounts receivable				
25. Aggregate write-ins for other than invested assets				460,735
26. Total assets excluding Separate Accounts, Segregated Accounts and Protected Cell Accounts (Lines 12 to 25)	525,364,379	1,130,381	524,233,998	488,015,749
27. From Separate Accounts, Segregated Accounts and Protected Cell Accounts	4,519,179,681		4,519,179,681	4,974,831,570
28. Total (Lines 26 and 27)	5,044,544,060	1,130,381	5,043,413,679	5,462,847,319
DETAILS OF WRITE-INS				
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				460,735
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)				460,735

STATEMENT AS OF SEPTEMBER 30, 2022 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 \$138,829,541 less \$ included in Line 6.3 (including \$121,811,651 Modco Reserve)	138,829,541	143,285,875
2. Aggregate reserve for accident and health contracts (including \$ Modco Reserve)		
3. Liability for deposit-type contracts (including \$ Modco Reserve)	14,140,948	15,980,530
4. Contract claims:		
4.1 Life	8,985,213	9,928,290
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	17,993,601	10,055,259
9.3 Other amounts payable on reinsurance, including \$ assumed and \$ 54,998,762 ceded	54,998,762	16,781,392
9.4 Interest Maintenance Reserve	926,211	1,206,859
10. Commissions to agents due or accrued-life and annuity contracts \$ 8,046 , accident and health \$ and deposit-type contract funds \$	8,046	16,615
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 \$ (285,247) accrued for expense allowances recognized in reserves, net of reinsured allowances)	6,460,101	16,974,112
14. Taxes, licenses and fees due or accrued, excluding federal income taxes	117,009	136,806
15.1 Current federal and foreign income taxes, including \$ on realized capital gains (losses)	1,041,634	
15.2 Net deferred tax liability		
16. Unearned investment income		
17. Amounts withheld or retained by reporting entity as agent or trustee	47,328	7,455
18. Amounts held for agents' account, including \$ agents' credit balances		
19. Remittances and items not allocated	151,697	(2,518,716)
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	6,775,413	6,056,250
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	3,326,725	4,310,158
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	434,481	365,273
26. Total liabilities excluding Separate Accounts business (Lines 1 to 25)	254,239,713	222,586,158
27. From Separate Accounts Statement	4,519,179,681	4,974,831,570
28. Total liabilities (Lines 26 and 27)	4,773,419,394	5,197,417,728
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)	123,757,171	119,192,476
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)	267,494,085	262,929,391
38. Totals of Lines 29, 30 and 37	269,994,285	265,429,591
39. Totals of Lines 28 and 38 (Page 2, Line 28, Col. 3)	5,043,413,679	5,462,847,319
DETAILS OF WRITE-INS		
2501. Miscellaneous liabilities	300,740	245,103
2502. Funds awaiting escheat	133,741	120,170
2503.		
2598. Summary of remaining write-ins for Line 25 from overflow page		
2599. Totals (Lines 2501 through 2503 plus 2598)(Line 25 above)	434,481	365,273
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)		

SUMMARY OF OPERATIONS

	1	2	3
	Current Year To Date	Prior Year To Date	Prior Year Ended December 31
1. Premiums and annuity considerations for life and accident and health contracts	(121,626)	9,806,614	11,403,237
2. Considerations for supplementary contracts with life contingencies	640,595	171,646	302,218
3. Net investment income	10,608,718	9,765,113	12,821,868
4. Amortization of Interest Maintenance Reserve (IMR)	194,373	200,196	274,299
5. Separate Accounts net gain from operations excluding unrealized gains or losses			
6. Commissions and expense allowances on reinsurance ceded	7,740,102	7,792,792	10,396,525
7. Reserve adjustments on reinsurance ceded	(102,951,196)	(64,693,213)	(78,829,689)
8. Miscellaneous Income:			
8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts	62,001,794	57,247,644	68,296,970
8.2 Charges and fees for deposit-type contracts			
8.3 Aggregate write-ins for miscellaneous income	(1,201,949)	34,540	(27,023)
9. Totals (Lines 1 to 8.3)	(23,089,189)	20,325,332	24,638,404
10. Death benefits	43,226,450	58,801,395	76,520,023
11. Matured endowments (excluding guaranteed annual pure endowments)			
12. Annuity benefits	712,962	1,027,650	1,003,671
13. Disability benefits and benefits under accident and health contracts	276,650	292,232	397,745
14. Coupons, guaranteed annual pure endowments and similar benefits			
15. Surrender benefits and withdrawals for life contracts	2,639,448	2,994,603	4,299,356
16. Group conversions			
17. Interest and adjustments on contract or deposit-type contract funds	1,392,349	871,378	1,241,960
18. Payments on supplementary contracts with life contingencies	55,667	29,430	42,724
19. Increase in aggregate reserves for life and accident and health contracts	(4,456,334)	(415,186)	160,895
20. Totals (Lines 10 to 19)	43,847,191	63,601,502	83,666,373
21. Commissions on premiums, annuity considerations, and deposit-type contract funds (direct business only)	1,418,791	1,467,281	1,972,212
22. Commissions and expense allowances on reinsurance assumed			
23. General insurance expenses and fraternal expenses	9,321,561	3,933,987	7,767,022
24. Insurance taxes, licenses and fees, excluding federal income taxes	817,973	646,967	1,174,357
25. Increase in loading on deferred and uncollected premiums		(9,474)	(9,474)
26. Net transfers to or (from) Separate Accounts net of reinsurance	(83,362,318)	(69,141,504)	(89,497,513)
27. Aggregate write-ins for deductions	(806,999)	(1,365,650)	(1,998,713)
28. Totals (Lines 20 to 27)	(28,763,801)	(866,892)	3,074,263
29. Net gain from operations before dividends to policyholders and federal income taxes (Line 9 minus Line 28)	5,674,612	21,192,223	21,564,141
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)	5,674,612	21,192,223	21,564,141
32. Federal and foreign income taxes incurred (excluding tax on capital gains)	(814,318)	2,793,147	2,976,391
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)	6,488,930	18,399,076	18,587,750
34. Net realized capital gains (losses) (excluding gains (losses) transferred to the IMR) less capital gains tax of \$(16,227) (excluding taxes of \$(22,934) transferred to the IMR)	(6,314)	(48,323)	(51,270)
35. Net income (Line 33 plus Line 34)	6,482,616	18,350,754	18,536,480
CAPITAL AND SURPLUS ACCOUNT			
36. Capital and surplus, December 31, prior year	265,429,591	274,509,526	274,509,526
37. Net income (Line 35)	6,482,616	18,350,754	18,536,480
38. Change in net unrealized capital gains (losses) less capital gains tax of \$(27,348) .....(102,882)	(102,882)	(92,087)	19,696
39. Change in net unrealized foreign exchange capital gain (loss)			
40. Change in net deferred income tax	(1,062,256)	(616,441)	(180,399)
41. Change in nonadmitted assets	1,088,751	365,596	17,076
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			
44. Change in asset valuation reserve	(719,162)	156,444	1,136,639
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			(27,000,000)
53. Aggregate write-ins for gains and losses in surplus	(1,122,371)	(1,207,071)	(1,609,427)
54. Net change in capital and surplus for the year (Lines 37 through 53)	4,564,695	16,957,197	(9,079,935)
55. Capital and surplus, as of statement date (Lines 36 + 54)	269,994,285	291,466,723	265,429,591
DETAILS OF WRITE-INS			
08.301. Management and administrative fees	(1,174,702)	(1,347,677)	(1,841,568)
08.302. Miscellaneous	(709,515)	560,293	696,296
08.303. Revenue sharing	682,268	821,924	1,118,249
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)	(1,201,949)	34,540	(27,023)
2701. Reinsurance ceded adjustment	(1,122,371)	(1,207,071)	(1,609,427)
2702. Miscellaneous charges to operations	315,373	(158,579)	(389,286)
2703.			
2798. Summary of remaining write-ins for Line 27 from overflow page			
2799. Totals (Lines 2701 through 2703 plus 2798)(Line 27 above)	(806,999)	(1,365,650)	(1,998,713)
5301. Reinsurance ceded adjustment	(1,122,371)	(1,207,071)	(1,609,427)
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)	(1,122,371)	(1,207,071)	(1,609,427)

STATEMENT AS OF SEPTEMBER 30, 2022 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
Cash from Operations			
1. Premiums collected net of reinsurance	1,057,805	3,437,210	3,170,054
2. Net investment income	9,935,034	9,269,048	12,856,801
3. Miscellaneous income	20,466,352	15,187,006	9,539,345
4. Total (Lines 1 to 3)	31,459,191	27,893,264	25,566,200
5. Benefit and loss related payments	114,377,062	71,035,361	88,522,573
6. Net transfers to Separate Accounts, Segregated Accounts and Protected Cell Accounts	(73,309,041)	(74,609,073)	(92,363,691)
7. Commissions, expenses paid and aggregate write-ins for deductions	12,528,802	4,080,261	8,770,837
8. Dividends paid to policyholders			
9. Federal and foreign income taxes paid (recovered) net of \$ (774,852) tax on capital gains (losses)	(6,059,351)	3,452,969	3,420,831
10. Total (Lines 5 through 9)	47,537,472	3,959,518	8,350,550
11. Net cash from operations (Line 4 minus Line 10)	(16,078,281)	23,933,746	17,215,650
Cash from Investments			
12. Proceeds from investments sold, matured or repaid:			
12.1 Bonds	4,873,762	27,374,060	33,483,635
12.2 Stocks			
12.3 Mortgage loans	178,180	229,112	311,249
12.4 Real estate			
12.5 Other invested assets			
12.6 Net gains or (losses) on cash, cash equivalents and short-term investments	(573)	116	558
12.7 Miscellaneous proceeds		(3,208,556)	
12.8 Total investment proceeds (Lines 12.1 to 12.7)	5,051,369	24,394,732	33,795,442
13. Cost of investments acquired (long-term only):			
13.1 Bonds	302,668	4,399,846	7,437,278
13.2 Stocks			
13.3 Mortgage loans	916	609	735
13.4 Real estate			
13.5 Other invested assets			
13.6 Miscellaneous applications			
13.7 Total investments acquired (Lines 13.1 to 13.6)	303,584	4,400,455	7,438,013
14. Net increase (or decrease) in contract loans and premium notes	3,512,464	(1,586,800)	(2,176,191)
15. Net cash from investments (Line 12.8 minus Line 13.7 and Line 14)	1,235,321	21,581,077	28,533,620
Cash from Financing and Miscellaneous Sources			
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	(2,293,054)	1,332,796	1,793,464
16.5 Dividends to stockholders			27,000,000
16.6 Other cash provided (applied)	2,028,946	256,043	(3,058,823)
17. Net cash from financing and miscellaneous sources (Line 16.1 through Line 16.4 minus Line 16.5 plus Line 16.6)	(264,108)	1,588,839	(28,265,360)
RECONCILIATION OF CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS			
18. Net change in cash, cash equivalents and short-term investments (Line 11, plus Lines 15 and 17)	(15,107,068)	47,103,662	17,483,910
19. Cash, cash equivalents and short-term investments:			
19.1 Beginning of year	121,099,505	103,615,595	103,615,595
19.2 End of period (Line 18 plus Line 19.1)	105,992,437	150,719,257	121,099,505

Note: Supplemental disclosures of cash flow information for non-cash transactions:

20.0001. Bond conversions and refinancing	423	581,403	435
20.0002. Stock conversions		4,641	4,641

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	20,097,816	30,533,467	39,038,035
3. Ordinary individual annuities	3,600	14,800	16,000
4. Credit life (group and individual)			
5. Group life insurance	(6,863,795)	(6,353,097)	310,873
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)	13,237,621	24,195,170	39,364,908
12. Fraternal (Fraternal Benefit Societies Only)			
13. Subtotal (Lines 11 through 12)	13,237,621	24,195,170	39,364,908
14. Deposit-type contracts			
15. Total (Lines 13 and 14)	13,237,621	24,195,170	39,364,908
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

Note 1 – Summary of Significant Accounting Policies and Going Concern

Note 2 – Accounting Changes and Corrections of Errors

Note 3 – Business Combinations and Goodwill

Note 4 – Discontinued Operations

Note 5 – Investments

Note 6 – Joint Ventures, Partnerships and Limited Liability Companies

Note 7 – Investment Income

Note 8 – Derivative Instruments

Note 9 – Income Taxes

Note 10 – Information Concerning Parent, Subsidiaries and Affiliates

Note 11 – Debt

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

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

Note 14 – Liabilities, Contingencies and Assessments

Note 15 – Leases

Note 16 – Information About Financial Instruments With Off-Balance Sheet Risk and Financial Instruments With Concentrations of Credit Risk

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

Note 18 – Gain or Loss to the Reporting Entity from Uninsured Plans and the Uninsured Portion of Partially Insured Plans

Note 19 – Direct Premium Written/Produced by Managing General Agents/Third Party Administrators

Note 20 – Fair Value Measurements

Note 21 – Other Items

Note 22 – Events Subsequent

Note 23 – Reinsurance

Note 24 – Retrospectively Rated Contracts and Contracts Subject to Redetermination

Note 25 – Change in Incurred Losses and Loss Adjustment Expenses

Note 26 – Intercompany Pooling Arrangements

Note 27 – Structured Settlements

Note 28 – Health Care Receivables

Note 29 – Participating Policies

Note 30 – Premium Deficiency Reserves

Note 31 – Reserves for Life Contracts and Annuity Contracts

Note 32 – Analysis of Annuity Actuarial Reserves and Deposit Type Liabilities by Withdrawal Characteristics

Note 33 – Analysis of Life Actuarial Reserves by Withdrawal Characteristics

Note 34 – Premium and Annuity Considerations Deferred and Uncollected

Note 35 – Separate Accounts

Note 36 – Loss/Claim Adjustment Expenses

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 #	2022	2021
NET INCOME					
(1) State basis (Page 4, Line 35, Columns 1 & 3)	XXX	XXX	XXX	\$ 6,482,616	\$ 18,536,480
(2) State prescribed practices that increase/(decrease) NAIC SAP:	N/A	N/A	N/A	-	-
(3) State permitted practices that increase/(decrease) NAIC SAP:	N/A	N/A	N/A	-	-
(4) NAIC SAP (1-2-3=4)	XXX	XXX	XXX	\$ 6,482,616	\$ 18,536,480
SURPLUS					
(5) State basis (Page 3, Line 38, Columns 1 & 2)	XXX	XXX	XXX	\$ 269,994,285	\$ 265,429,591
(6) State prescribed practices that increase/(decrease) NAIC SAP:	N/A	N/A	N/A	-	-
(7) State permitted practices that increase/(decrease) NAIC SAP:	N/A	N/A	N/A	-	-
(8) NAIC SAP (5-6-7=8)	XXX	XXX	XXX	\$ 269,994,285	\$ 265,429,591

- 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, 2022 and 2021, the Company did not record any corrections of prior years' errors.
- b. Adoption of new accounting standards - No change

Note 3 – Business Combinations and Goodwill - No change

Note 4 – Discontinued Operations - No change

Note 5 – Investments

- a. Mortgage loans - No change
- b. Debt restructuring - No change
- c. Reverse mortgages - No change

NOTES TO FINANCIAL STATEMENTS

- 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	140,707	-	10,724	129,983
c. Total first quarter	<u>\$ 140,707</u>	<u>\$ -</u>	<u>\$ 10,724</u>	<u>\$ 129,983</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	64,745	-	2,375	62,370
f. Total second quarter	<u>\$ 64,745</u>	<u>\$ -</u>	<u>\$ 2,375</u>	<u>\$ 62,370</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	134,938	-	9,442	125,496
i. Total third quarter	<u>\$ 134,938</u>	<u>\$ -</u>	<u>\$ 9,442</u>	<u>\$ 125,496</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>
m. Annual aggregate total		<u>\$ -</u>	<u>\$ 22,541</u>	

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	\$ 82,137	\$ 76,431	\$ (5,706)	\$ 76,431	\$ 70,200	March 31, 2022
40431KAE0	58,570	53,552	(5,018)	53,552	58,296	March 31, 2022
589929X29	64,745	62,370	(2,375)	62,370	62,586	June 30, 2022
40431KAE0	52,177	50,186	(1,991)	50,186	48,254	September 30, 2022
61750FAE0	76,177	68,740	(7,437)	68,740	59,722	September 30, 2022
22540VG71	6,584	6,569	(15)	6,569	6,644	September 30, 2022
Totals	\$ 340,390	\$ 317,848	\$ (22,542)	\$ 317,848	\$ 305,702	

- (4) As of September 30, 2022, the gross unrealized losses and fair values for investments in structured and loan-backed securities for an OTTI has not been recognized in earnings follow:
- a. The aggregate amount of unrealized losses:
- | | |
|------------------------|----------------|
| 1. Less than 12 months | \$ (6,339,533) |
| 2. 12 months or longer | \$ (1,321,290) |
- b. The aggregate related fair value of securities with unrealized losses:
- | | |
|------------------------|---------------|
| 1. Less than 12 months | \$ 60,492,673 |
| 2. 12 months or longer | \$ 6,872,232 |

- (5) No change

NOTES TO FINANCIAL STATEMENTS

- 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, 2022.
- f. Repurchase agreements transactions accounted for as secured borrowing:
 - (1) The Company did not have any repurchase agreements as of September 30, 2022.
- 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, 2022.
- 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, 2022.
- 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, 2022.
- 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, 2022.
- 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, 2022.
- 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	\$-	\$-	\$-	\$-
(2) LB&SS - AC	-	-	-	-	-	-
(3) Preferred Stock - AC	-	-	-	-	-	-
(4) Preferred Stock - FV	-	-	-	-	-	-
(5) Total (1+2+3+4)	-	1	\$-	\$-	\$-	\$-

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, 2022			
		General Account	Separate Account
1. Number of CUSIPS		6	2
2. Aggregate amount of investment income	\$	297,248	\$ 1,742

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

Asset Type	Percent Share
(1) Cash	(51) %
(2) Cash equivalents	151 %
(3) Short-term investments	- %
(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 30,2022.

Note 9 – Income Taxes – No change.

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

- Note 11 – Debt**
- a. No change
 - b. The Company is not a member of the Federal Home Loan Bank (FHLB) therefore it has no FHLB funding agreements.

NOTES TO FINANCIAL STATEMENTS

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 2022 or 2021.
 - (3) No change
 - (4) The Company did not have interests that continue to be held by a transferor in securitized financial assets in 2022 or 2021.
 - (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 30,2022 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, 2022					
	Level 1	Level 2	Level 3	Net Asset Value (NAV)	Total
Financial assets:					
Bonds:					
Industrial and miscellaneous	\$ -	\$ 624,203	\$ -	\$ -	\$ 624,203
Common stock - unaffiliated	16,395	-	-	-	16,395
Separate account assets ⁽¹⁾	958,266,152	2,361,225,652	-	-	3,319,491,804
Total financial assets carried at fair value	\$ 958,282,547	\$ 2,361,849,855	\$ -	\$ -	\$ 3,320,132,402

⁽¹⁾\$1,199,687,877 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 30,2022, 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, 2021					
	Level 1	Level 2	Level 3	Net Asset Value (NAV)	Total
Financial assets:					
Bonds:					
Industrial and miscellaneous	\$ -	\$ 746,832	\$ -	\$ -	\$ 746,832
Common stock - unaffiliated	12,060	-	-	-	12,060
Separate account assets ⁽¹⁾	1,377,931,066	2,364,973,481	-	-	3,742,904,547
Total financial assets carried at fair value	\$ 1,377,943,126	\$ 2,365,720,313	\$ -	\$ -	\$ 3,743,663,439

⁽¹⁾\$1,221,894,992 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 and, therefore, are not included in this table.
- (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, 2022								
	Aggregate	Admitted					Net	Not
	Fair Value	Assets	Level 1	Level 2	Level 3		Asset	Practicable
							Value	(Carrying
							(NAV)	Value)
Financial assets:								
Bonds:								
U. S. government and agencies	\$ 4,365,756	\$ 4,445,418	\$ -	\$ 4,365,756	\$ -	\$ -	\$ -	-
Special revenue	25,900	25,055	-	25,900	-	-	-	-
Industrial and miscellaneous	193,122,899	208,496,310	-	193,079,897	43,002	-	-	-
Parent, subsidiaries and affiliates	834,646	993,235	-	834,646	-	-	-	-
Common stock - unaffiliated	16,395	16,395	16,395	-	-	-	-	-
Mortgage loans - residential	1,484,072	1,592,701	-	-	1,484,072	-	-	-
Cash, cash equivalents and short-term investments	105,992,437	105,992,437	(53,667,463)	159,659,900	-	-	-	-
Separate account assets	4,407,350,959	4,519,179,681	958,266,152	3,441,791,425	7,293,382	-	-	-
Financial liabilities:								
Individual annuity contracts	2,995,665	2,880,447	-	-	2,995,665	-	-	-
Supplementary contracts	13,473,966	13,340,560	-	-	13,473,966	-	-	-

STATEMENT AS OF SEPTEMBER 30, 2022 OF MML Bay State Life Insurance Company

NOTES TO FINANCIAL STATEMENTS

December 31, 2021							Net	Not
							Asset	Practicable
							Value	(Carrying
							(NAV)	Value)
Financial assets:	Aggregate	Admitted	Level 1	Level 2	Level 3			
	Fair Value	Assets						
Bonds:								
U. S. government and agencies	\$ 4,427,099	\$ 4,444,612	\$ -	\$ 4,427,099	\$ -	\$ -	\$ -	-
Special revenue	33,217	29,261	-	33,217	-	-	-	-
Industrial and miscellaneous	226,790,617	213,262,248	-	226,672,401	118,216	-	-	-
Parent, subsidiaries and affiliates	990,891	992,122	-	990,891	-	-	-	-
Common stock - unaffiliated	12,060	12,060	12,060	-	-	-	-	-
Mortgage loans - residential	1,779,909	1,771,148	-	-	1,779,909	-	-	-
Cash, cash equivalents and short-term investments	121,099,505	121,099,505	7,111,307	113,988,198	-	-	-	-
Separate account assets	5,003,598,884	4,974,831,570	1,387,965,897	3,606,758,678	8,874,309	-	-	-
Financial liabilities:								
Individual annuity contracts	3,002,675	2,890,477	-	-	3,002,675	-	-	-
Supplementary contracts	15,454,191	15,301,179	-	-	15,454,191	-	-	-

d. As of September 30, 2022 and December 31, 2021, 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 2021 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.

NOTES TO FINANCIAL STATEMENTS

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, 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 geopolitics 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
- (3) Direct exposure through other investments:

Residential mortgage-backed securities risk exposure:

Alt-A:	September 30, 2022			Nine Months Ended September 30, 2022	
	Actual	Carrying	Fair	OTTI	
	Cost	Value	Value		
a. Residential mortgage-backed securities	\$ 314,748	\$ 391,782	\$ 409,529	\$	-
b. Commercial mortgage-backed securities	-	-	-		-
c. Collateralized debt obligations	-	-	-		-
d. Structured securities	-	-	-		-
e. Equity investments in SCA	-	-	-		-
f. Other assets	-	-	-		-
g. Total	\$ 314,748	\$ 391,782	\$ 409,529	\$	-

Alt-A:	December 31, 2021			Year Ended December 31, 2021	
	Actual	Carrying	Fair	OTTI	
	Cost	Value	Value		
a. Residential mortgage-backed securities	\$ 1,370,314	\$ 1,456,976	\$ 1,509,707	\$	-
b. Commercial mortgage-backed securities	-	-	-		-
c. Collateralized debt obligations	-	-	-		-
d. Structured securities	-	-	-		-
e. Equity investments in SCA	-	-	-		-
f. Other assets	-	-	-		-
g. Total	\$ 1,370,314	\$ 1,456,976	\$ 1,509,707	\$	-

- (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 14, 2022, 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 2022 for incurred losses and loss adjustment expenses attributable to insured events of prior years, which considered corrections of prior year errors.

NOTES TO FINANCIAL STATEMENTS

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

STATEMENT AS OF SEPTEMBER 30, 2022 OF THE MML Bay State Life Insurance Company

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?

If yes, complete Schedule Y, Parts 1 and 1A.

Yes [X] No []
- 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]
- 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 | 2 | 3 |
|----------------|-------------------|-------------------|
| Name of Entity | NAIC Company Code | 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?

If yes, attach an explanation.

Yes [] No [X] N/A []
- 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?
State of Connecticut Insurance Department
- 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	Windsor, CT		YES		
Flourish Financial, LLC	New York, NY				YES

STATEMENT AS OF SEPTEMBER 30, 2022 OF THE MML Bay State Life Insurance Company

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?
(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.

Yes [X] No []
- 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 [X] No []
- 9.21

If the response to 9.2 is Yes, provide information related to amendment(s).
Changed references from HR business partner to Employee Relations in response to an HR organizational change.
- 9.3

Have any provisions of the code of ethics been waived for any of the specified officers?

Yes [] No [X]
- 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 [X] 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 [X]
- 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 [X] No []
- 14.2

If yes, please complete the following:

	1	2
	Prior Year-End Book/Adjusted Carrying Value	Current Quarter Book/Adjusted Carrying Value
14.21 Bonds	\$ 992,122	\$ 993,235
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)	\$ 992,122	\$ 993,235
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 [X]
- 15.2

If yes, has a comprehensive description of the hedging program been made available to the domiciliary state?
If no, attach a description with this statement.

Yes [] No [] N/A [X]
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.

\$

STATEMENT AS OF SEPTEMBER 30, 2022 OF THE MML Bay State Life Insurance Company

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 [X] 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 [X]
- 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
Bar ings 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 [X]

- 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 [X]

- 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	2	3	4	5
Central Registration Depository Number	Name of Firm or Individual	Legal Entity Identifier (LEI)	Registered With	Investment Management Agreement (IMA) Filed
106006	Bar ings LLC	5493005EMQYELJUS5W59	SEC	DS.....

- 18.1 Have all the filing requirements of the Purposes and Procedures Manual of the NAIC Investment Analysis Office been followed? Yes [X] 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:
- a. 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.
 - b. Issuer or obligor is current on all contracted interest and principal payments.
 - c. 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 [X]

20. By self-designating PLGI securities, the reporting entity is certifying the following elements of each self-designated PLGI security:
- a. The security was purchased prior to January 1, 2018.
 - b. The reporting entity is holding capital commensurate with the NAIC Designation reported for the security.
 - c. 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.
 - d. 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 [X]

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:
- a. The shares were purchased prior to January 1, 2019.
 - b. The reporting entity is holding capital commensurate with the NAIC Designation reported for the security.
 - c. 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.
 - d. The fund only or predominantly holds bonds in its portfolio.
 - e. 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.
 - f. 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 [X]

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

\$

1,592,701

1.13

Commercial Mortgages

\$

1.14

Total Mortgages in Good Standing

\$

1,592,701

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)

\$

1,592,701

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	2	3	4	5	6	7	8	9	10
NAIC Company Code	ID Number	Effective Date	Name of Reinsurer	Domiciliary Jurisdiction	Type of Reinsurance Contract	Type of Business Ceded	Type of Reinsurer	Certified Reinsurer Rating (1 through 6)	Effective Date of Certified Reinsurer Rating

STATEMENT AS OF SEPTEMBER 30, 2022 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	Direct Business Only				
			Life Contracts		4	5	6
			2	3			
		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	126,852			126,852
2.	Alaska	AK	L	450			450
3.	Arizona	AZ	L	475,694			475,694
4.	Arkansas	AR	L	61,672			61,672
5.	California	CA	L	2,446,631			2,446,631
6.	Colorado	CO	L	476,296			476,296
7.	Connecticut	CT	L	513,666			513,666
8.	Delaware	DE	L	62,876			62,876
9.	District of Columbia	DC	L	417,091			417,091
10.	Florida	FL	L	1,298,271			1,298,271
11.	Georgia	GA	L	339,755			339,755
12.	Hawaii	HI	L	108,135			108,135
13.	Idaho	ID	L	61,512			61,512
14.	Illinois	IL	L	761,374			761,374
15.	Indiana	IN	L	265,274			265,274
16.	Iowa	IA	L	280,310	1,350		281,660
17.	Kansas	KS	L	166,286			166,286
18.	Kentucky	KY	L	128,003			128,003
19.	Louisiana	LA	L	216,343			216,343
20.	Maine	ME	L	106,373			106,373
21.	Maryland	MD	L	502,316			502,316
22.	Massachusetts	MA	L	562,307			562,307
23.	Michigan	MI	L	615,486			615,486
24.	Minnesota	MN	L	259,810			259,810
25.	Mississippi	MS	L	129,889			129,889
26.	Missouri	MO	L	316,183			316,183
27.	Montana	MT	L	140,100			140,100
28.	Nebraska	NE	L	225,610	1,350		226,960
29.	Nevada	NV	L	173,590			173,590
30.	New Hampshire	NH	L	84,243			84,243
31.	New Jersey	NJ	L	902,923			902,923
32.	New Mexico	NM	L	69,985			69,985
33.	New York	NY	N	115,146			115,146
34.	North Carolina	NC	L	831,817			831,817
35.	North Dakota	ND	L	4,587			4,587
36.	Ohio	OH	L	981,333			981,333
37.	Oklahoma	OK	L	532,968			532,968
38.	Oregon	OR	L	220,378			220,378
39.	Pennsylvania	PA	L	1,147,727			1,147,727
40.	Rhode Island	RI	L	224,486			224,486
41.	South Carolina	SC	L	368,670			368,670
42.	South Dakota	SD	L	17,152			17,152
43.	Tennessee	TN	L	398,372			398,372
44.	Texas	TX	L	1,550,493			1,550,493
45.	Utah	UT	L	256,513			256,513
46.	Vermont	VT	L	50,869	900		51,769
47.	Virginia	VA	L	808,703			808,703
48.	Washington	WA	L	680,364			680,364
49.	West Virginia	WV	L	125,917			125,917
50.	Wisconsin	WI	L	227,195			227,195
51.	Wyoming	WY	L	15,609			15,609
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	20			20
58.	Aggregate Other Aliens	OT	XXX	31,364			31,364
59.	Subtotal	XXX	20,884,989	3,600			20,888,589
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	287,375				287,375
94.	Aggregate or other amounts not allocable by State	XXX					
95.	Totals (Direct Business)	XXX	21,172,364	3,600			21,175,964
96.	Plus Reinsurance Assumed	XXX					
97.	Totals (All Business)	XXX	21,172,364	3,600			21,175,964
98.	Less Reinsurance Ceded	XXX	20,118,159				20,118,159
99.	Totals (All Business) less Reinsurance Ceded	XXX	1,054,205	3,600			1,057,805
DETAILS OF WRITE-INS							
58001.	ZZZ Other Alien	XXX	31,364				31,364
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	31,364				31,364
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>
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY	04-1590850	65935	Massachusetts
Direct & Indirect Owned Subsidiaries:			
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 I I LLC	None		Delaware
MM Global Capabilities I II LLC	None		Delaware
MM/Barings Multifamily TEBS 2020 LLC	None		Delaware
Berkshire Way LLC	04-1590850		Delaware
MML Special Situations Investor LLC	None		Delaware
MassMutual Ventures Europe/APAC I GP, 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
Lyme Adirondack Timber Sales, LLC	None		Delaware
MSP-SC, LLC	04-1590850		Delaware
Insurance Road LLC	04-1590850		Delaware
MassMutual Trad Private Equity 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
MassMutual Ventures US IV, GP, LLC	None		Delaware
MassMutual Ventures US IV, L.P.	None		Delaware
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
Jefferies Credit Management LLC	None		Delaware

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

	Federal Tax ID	NAIC Co Code	State of
JCP Direct Lending CLO 2022 LLC	None		Delaware
JFAM GP LLC	None		Delaware
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
JDLF II GP LLC	None		Delaware
JDLF II GP LP	None		Delaware
Jefferies Direct Lending Fund II C LP	None		Delaware
Jefferies DLF II C Holdings LLC	None		Delaware
Jefferies Direct Lending Fund II C SPE LLC	None		Delaware
Jefferies Private Credit BDC Inc.	None		Maryland
Jefferies Senior Lending LLC	None		Delaware
Jefferies Credit Partners BDC Inc	None		Maryland
JFIN Revolver Holdings LLC	None		Delaware
JFIN Revolver Holdings II LLC	None		Delaware
JFIN Revolver Holdings IV 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 Funding 2021 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 CLO 2021-V Ltd.	None		Cayman Islands
JFIN Revolver CLO 2022-II Ltd.	None		Cayman Islands
JFIN Revolver CLO 2022-III 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
JFIN Revolver Funding 2022-I Ltd.	None		Bermuda

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

PART 1 – ORGANIZATIONAL CHART

	Federal Tax ID	NAIC Co Code	State of Domicile
JFIN Revolver SPE1 2022 LLC	None		Delaware
JFIN Revolver SPE3 2022 LLC	None		Delaware
JFIN Revolver SPE4 2022 LLC	None		Delaware
SFL Parkway Funding 2022 LLC	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
Manhattan National Holding, LLC	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 Investment 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

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

PART 1 – ORGANIZATIONAL CHART

	Federal Tax ID	NAIC Co Code	State of Domicile
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 Holding Company LLC	None		Delaware
Flourish Insurance Agency 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
Low Carbon Energy Holding	None		United Kingdom
Sleeper Street LLC	None		Delaware
Haven Life Insurance Agency, LLC	46-2252944		Delaware
Aland Royalty Holdings LP	None		Delaware
GASL Holdings LLC	None		Delaware
Barings Asset-Based Income Fund (US) LP	None		Delaware
Babson Capital Global Special Situation Credit Fund 2*	98-1206017		Delaware
Barings Global Real Assets Fund LP	82-3867745		Delaware
Barings Global Special Situations Credit Fund 3	None		Ireland
Barings North American Private Loan Fund LP	38-4010344		Delaware
MassMutual Assignment Company	06-1597528		North Carolina
MassMutual Capital Partners LLC	04-1590850		Delaware
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 Southeast Asia III LLC	None		Delaware
MMV Digital I LLC	None		Cayman Islands
MassMutual Ventures UK LLC	None		Delaware
MassMutual Ventures US I LLC	47-1296410		Delaware
MassMutual Ventures US II LLC	None		Delaware

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

PART 1 – ORGANIZATIONAL CHART

	Federal Tax ID	NAIC Co Code	State of Domicile
MassMutual Ventures US III LLC	None		Delaware
MassMutual Ventures US IV LLC	None		Delaware
Open Alternatives LLC	None		Delaware
MM Catalyst Fund LLC	None		Delaware
MM Rothesay Holdeo US LLC	04-1590850		Delaware
Rothesay Limited	None		United Kingdom
Rothesay Mortgages Limited	None		United Kingdom
Rothesay Life Plc	None		United Kingdom
Rothesay MA No.1 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
Barings Japan Limited	98-0236449		Japan
Barings Australia Real Estate Holdings Pty Ltd	None		Australia
Barings Australia Real Estate Pty Ltd	14-0045656		Australia
Altis Property Partners Holdings 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 Real Estate Acquisitions LLC	None		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>
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 GmbH	None		Germany
Barings Italy S.r.l.	None		Italy
Barings Sweden AB	None		Sweden
Barings Netherlands B.V.	None		Netherlands
Barings Real Estate UK Holdings Limited	None		Delaware
Barings (U.K.) Limited	98-0432153		United Kingdom
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 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
BMC Holdings DE LLC	None		Delaware
Barings Real Estate Advisers Inc.	04-3238351		Delaware
CRA Aircraft Holding LLC*	81-4258759		Delaware
Chassis Acquisition Holding LLC	81-2244465		Delaware
EIP Holdings I, 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

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

PART 1 – ORGANIZATIONAL CHART

	Federal Tax ID	NAIC Co Code	State of Domicile
Teaktree Acquisition, LLC	None		Delaware
Techquity, LP	None		Delaware
Validus Holding Company LLC	46-0687392		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 Infiniti Fund Management 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 Emerging Generation Fund GP II, 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 Centre Street CLO Equity Partnership GP, LLC	None		Delaware
Barings Centre Street CLO Equity Partnership LP	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 II Management, LLC	None		Delaware
Barings North American Private Loan Fund III Management, LLC	None		Delaware
Barings Global Special Situations Credit Fund 4 GP (Delaware) LLC	None		Delaware
Barings - MM Revolver Fund GP LLC	None		Delaware
BMT RE Debt Fund GP LLC	None		Delaware
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
BIG Real Estate Incentive I LLC	None		Delaware
BIG Real Estate Incentive II LLC	None		Delaware
BRECS VII GP LLC	None		Delaware
BREDIF GP LLC	None		Delaware
CREF X GP LLC	None		Delaware

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PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
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
Other Affiliates & Funds:			
100 w. 3 rd 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 Emerging Markets Corporate Bond Fund*	None		Ireland
Barings European Real Estate Debt Income Fund	None		Luxembourg
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
SouthBabson 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

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PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
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	ZJX0JI.99999.SL.136		Cayman Islands
Barings CLO 2021-II	EPXAC4.99999.SL.136 (GIIN)		Cayman Islands
Barings CLO 2021-III	None		Cayman Islands
Barings CLO 2022-I	98-1624360		Cayman Island
Barings CLO 2022-II	None		Cayman Island
Babson Euro CLO 2014-I BV	None		Netherlands
Babson Euro CLO 2014-II BV	None		Netherlands
Babson Euro CLO 2015-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 Euro CLO 2021-II DAC	3750378QH		Ireland
Barings Euro CLO 2021-III DAC	None		Ireland
Barings Global Em. Markets Equity Fund	82-5330194		North Carolina
Barings Global Energy Infrastructure Fund I LP	98-1332384		Cayman Islands
Barings Global Special Situations Credit 4 Delaware*	85-1465973		Delaware
Barings Global Special Situations Credit 4 LUX*	98-1570693		Luxembourg
Barings Global Technology Equity Fund	HU7DQ.00011.SF.372(GIIN)		Ireland
Barings Europe Select Fund	None		Ireland
Barings Hotel Opportunity Venture	87-0977058		Connecticut
Barings Innovations & Growth Real Estate Fund*	86-3661023		Delaware
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
Barings Middle Market CLO Ltd 2021-I	98-1612604		Cayman Islands
Barings RE Credit Strategies VII LP	98-1332384		Delaware
Barings Target Yield Infrastructure Debt Fund*	98-1567942		Luxembourg
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
Barings Transportation Fund LP*	87-1262754		Delaware
Braemar Energy Ventures I, L.P.*	None		Delaware
Barings European Core Property Fund SCSp	None		Luxembourg
Barings European Private Loan Fund III A	46-5001122		Luxembourg

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PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
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 X LP	46-5432619		Delaware
Gateway Mezzanine Partners II LP*	90-0991195		Delaware
Great Lakes III, L.P.	37-1708623		Delaware
GIA EU Holdings - Emerson JV Sarl	98-1607033		Luxembourg
JPMCC Commercial Mortgage Securities Trust 2017-JP7	38-4041011; 38-4041012		New York
JPMDDB Commercial Mortgage Securities Trust 2017-C5	38-4032059		New York
KKR-MM Vector LP	82-1512591		Delaware
Marco Hotel LLC	46-4255307		Delaware
Martello Re	None		Bermuda
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
Miami Douglas Three MM LLC	04-1590850		Delaware
MM BIG Peninsula Co-Invest Member LLC	87-4021641		Delaware
MM Direct Private Investment Holding	04-1590850		Delaware
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
Somerset Special Opportunities Fund L.P.*	20-8856877		Delaware
Ten Fan Pier Boulevard LLC	35-2553915		Delaware
Tower Square Capital Partners III, L.P.	41-2280127		Delaware
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
Barings Affiliates & Funds:			
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	HU7DQ1.00015.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
Barings Real Estate Affiliates & Funds:			
Barings California Mortgage Fund IV	None		California

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

	Federal Tax ID	NAIC Co Code	State of Domicile
Barings Umbrella Fund LUX SCSp SICAV RAIF*	None		Luxembourg
Calgary Railway Holding LLC*	82-2285211		Delaware
Cornbrook PRS Holdings LLC	82-3307907		Delaware
Cornerstone California Mortgage Fund I LLC	95-4207717		California
Cornerstone California Mortgage Fund II LLC	95-4207717		California
Cornerstone California Mortgage Fund III LLC	95-4207717		California
Cornerstone Fort Pierce Development LLC*	56-2630592		Delaware
Cornerstone Permanent Mortgage Fund	45-2632610		Massachusetts
Cornerstone Permanent Mortgage Fund II	61-1750537		Massachusetts
Cornerstone Permanent Mortgage Fund III	35-2531693		Massachusetts
Cornerstone Permanent Mortgage Fund IV	61-1793735		Massachusetts
CREA/PPC Venture LLC	20-0348173		Delaware
Danville Riverwalk Venture, LLC	82-2783393		Delaware
Euro Real Estate Holdings LLC	04-1590850		Delaware
Fan Pier Development LLC*	20-3347091		Delaware
GIA EU Holdings LLC	04-1590850		Delaware
Landmark Manchester Holdings LLC	81-5360103		Delaware
MM Brookhaven Member LLC	04-1590850		Delaware
MM East South Crossing Member LLC	04-1590850		Delaware
MM Horizon Savannah Member LLC*	04-1590850		Delaware
MM National Self-Storage Program Member LLC	04-1590850		Delaware
MM 1400 E 4th Street Member LLC	04-1590850		Delaware
One Harbor Shore LLC*	80-0948028		Delaware
PACO France Logistics LLC	04-1590850		Delaware
Portland 400 Sixth Manager LLC	82-3393166		Delaware
Salomon Brothers Commercial Mortgage Trust 2001-MM	None		Delaware
STOA Holding LLC	None		Delaware
Three PW Office Holding LLC	81-5273574		Delaware
Trailside MM Member II LLC	04-1590850		Delaware
Unna, Dortmund Holding LLC	82-3250684		Delaware
Washington Gateway Apartments Venture LLC*	45-5401109		Delaware
West 37th Street Hotel LLC*	88-3861481		Delaware
MassMutual Premier Funds:			
MassMutual Premier Main Street Fund	51-0529328		Massachusetts
MassMutual Premier Strategic Emerging Markets Fund	26-3229251		Massachusetts
MassMutual Select Funds:			
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

*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

12.11

	Federal Tax ID	NAIC Co Code	State of Domicile
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
MML Series Investment Funds:			
MML Series International Equity Fund	46-4257056		Massachusetts
MML Series Investment Funds II:			
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
MassMutual RetireSMART Funds:			
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
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, 2022 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 Percen-tage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Yes/No)	*
.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.....	MM Global Capabilities I LLC	Ownership.....	100.000	MMLIC		
.0000							MM Global Capabilities (Netherlands) B.V. ....	.NLD	.NIA.....	MM Global Capabilities I LLC	Ownership.....	100.000	MMLIC		
.0000							MassMutual Global Business Services Romania S.R.L. ....	.ROU	.NIA.....	MM Global Capabilities (Netherlands) B.V.	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							MML Special Situations Investor LLC .....	.DE	.NIA.....	Massachusetts Mutual Life Insurance Company	Ownership.....	100.000	MMLIC		
.0000							MassMutual Ventures Europe/APAC I GP, 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	Influence.....	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.....	Lyme Adirondack Forest Company, LLC	Ownership.....	100.000	MMLIC		
.0000							Lyme Adirondack Timberlands II, LLC .....	.DE	.NIA.....	Lyme Adirondack Forest Company, LLC	Ownership.....	100.000	MMLIC		
.0000							Lyme Adirondack Timber Sales, LLC .....	.DE	.NIA.....	Lyme Adirondack Forest Company, 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							Massmutual Ventures US IV, GP, LLC .....	.DE	.NIA.....	Massachusetts Mutual Life Insurance Company	Ownership.....	100.000	MMLIC		
.0000							Massmutual Ventures US IV, LP .....	.DE	.NIA.....	Massmutual Ventures US IV, GP, LLC	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 Intellectual Property LLC .....	.DE	.NIA.....	Insurance Road LLC	Ownership.....	100.000	MMLIC		
.0000							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, 2022 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 Percen-tage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Yes/No)	*
.0000			27-0105644				JFIN Parent LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Jefferies Finance LLC	.DE	.NIA	JFIN Parent LLC	Ownership	50.000	MMLIC		1
.0000							Glidepath Holdings Inc.	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0435	Massachusetts Mut Life Ins Co	.63312	86-2294635				Great American Life Insurance Company	.OH	.IA	Glidepath Holdings Inc.	Ownership	100.000	MMLIC		
.0000			31-1935920				AAG Insurance Agency, LLC	.KY	.NIA	Great American Life Insurance Company	Ownership	100.000	MMLIC		
.0435	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, LLC	.OH	.NIA	Great American Life Insurance Company	Ownership	100.000	MMLIC		
.0435	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							Jefferies Private Credit BDC Inc.	.MD	.NIA	Jefferies Finance LLC	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 Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Credit Management LLC	.DE	.NIA	Jefferies Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JCP Direct Lending CLO 2022 LLC	.DE	.NIA	Jefferies Credit Partners LLC	Ownership	9.900	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	JFAM GP LP	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							JDLF II GP LLC	.DE	.NIA	Jefferies Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JDLF II GP LP	.DE	.NIA	JDLF II GP LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Direct Lending Fund II C LP	.DE	.NIA	JDLF II GP LP	Ownership	100.000	MMLIC		
.0000							Jefferies DLF II C Holdings LLC	.DE	.NIA	Jefferies Direct Lending Fund II C LP	Ownership	100.000	MMLIC		
.0000							Jefferies Direct Lending Fund II C SPE LLC	.DE	.NIA	Jefferies DLF II C Holdings LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Senior Lending LLC	.DE	.NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Senior Lending LLC	.DE	.NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Credit Partners BDC Inc	.MD	.NIA	Jefferies Finance 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 Revolver Holdings IV 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 Business Credit LLC	Ownership	100.000	MMLIC		
.0000							JFIN Funding 2021 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-V Ltd.	.CYM	.NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2022 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 Loca-tion	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 Percen-tage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Yes/No)	*
.0000							JFIN Revolver CLO 2022-II Ltd. ....	.CYM	NIA	Jefferies Finance LLC	Ownership.....	100.000	MMLIC		
.0000							JFIN Revolver CLO 2022-III Ltd. ....	.CYM	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 2022-I Ltd. ....	.BMU	NIA	Jefferies Finance LLC	Ownership.....	100.000	MMLIC		
.0000							JFIN Revolver SPE1 2022 LLC	.DE	NIA	Jefferies Finance LLC	Ownership.....	100.000	MMLIC		
.0000							JFIN Revolver SPE3 2022 LLC	.DE	NIA	Jefferies Finance LLC	Ownership.....	100.000	MMLIC		
.0000							JFIN Revolver SPE4 2022 LLC	.DE	NIA	Jefferies Finance LLC	Ownership.....	100.000	MMLIC		
.0000							SFL Parkway Funding 2022 LLC	.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		
.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		
.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 Holding Company LLC	.DE	NIA	MML CM LLC	Ownership.....	100.000	MMLIC		
.0000							Flourish Insurance Agency 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.....	99.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2022 OF THE MML Bay State Life Insurance Company

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

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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 Percen-tage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Yes/No)	*
.0000			04-3356880				MML Distributors LLC	MA	NIA	MassMutual Holding LLC	Ownership	1.000	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		
.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			04-1590850				MM Private Equity Intercontinental LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			45-2738137				Pioneers Gate LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	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	Company	Ownership	100.000	MMLIC		
.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							Low Carbon Energy Holding	GBR	NIA	MassMutual Holding LLC	Ownership	49.000	MMLIC		
.0000							Sleeper Street LLC	DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.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 Management 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 Southeast Asia III LLC	DE	NIA	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							MMV Digital I LLC	CYM	NIA	MassMutual Ventures Southeast Asia III 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							MassMutual Ventures US IV 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	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							Rothesay Limited	GBR	NIA	MM Rothesay Holdco US LLC	Ownership	48.800	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 Mortgages Limited	GBR	NIA	Rothesay Limited	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 Life PLC	Ownership	100.000	MMLIC		
.0000							Rothesay Property Partnership 1 LLP	GBR	NIA	Rothesay Life PLC	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		

STATEMENT AS OF SEPTEMBER 30, 2022 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 Percen-tage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Yes/No)	*
.0000							Rothesay Asset Management UK Limited	.GBR	NIA	Rothesay 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			45-4000072				MM Asset Management Holding LLC	.MA	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			45-4000072				Barings 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			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	Barings Investment Management (Shanghai) 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		
.0000							Barings Australia Real Estate Holdings Pty Ltd	.AUS	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000			14-0045656				Barings Australia Real Estate Pty Ltd	.AUS	NIA	Barings Australia Real Estate Holdings Pty Ltd	Ownership	100.000	MMLIC		
.0000			98-0457456				Altis Property Partners Holdings Pty Ltd	.AUS	NIA	Barings Australia Real Estate 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							Barings Real Estate Acquisitions LLC	.DE	NIA	Barings 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 GmbH	.DEU	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	.SWE	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			98-0432153				Barings (U.K.) Limited	.GBR	NIA	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000			98-0241935				Baring Asset Management Limited	.GBR	NIA	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings European Direct Lending 1 GP LLP	.GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-1012393				Barings Global Advisors Limited	.GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0457328				Baring International Investment Limited	.GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		

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 Owner-ship Provide Percen-tage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Yes/No)	*
.0000			98-0457587				Baring International Investment Management Holdings	.GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0457576				Baring Asset Management UK Holdings Limited	.GBR	NIA	Baring International Investment Management Holdings	Ownership	100.000	MMLIC		
.0000			98-0524272				Baring International Fund Managers (Ireland) Limited	.IRL	NIA	Baring Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000							Baring Asset Management Switzerland Sàrl	.CHE	NIA	Baring Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0497550				Baring France SAS	.FRA	NIA	Baring Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0457586				Baring Fund Managers Limited	.GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							BCGSS 2 GP LLP	.GBR	NIA	Baring Fund Managers Limited	Ownership	100.000	MMLIC		
.0000			98-0457578				Baring Investment Services Limited	.GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings Core Fund Feeder I GP S.à.r.l.	.LUX	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings BME GP S.à.r.l.	.GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings GPC GP S.à. r.l.	.LUX	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings European Core Property Fund GP Sàrl	.GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings Investment Fund (LUX) GP S.à. r.l.	.LUX	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings Umbrella Fund (LUX) GP S.à.r.l.	.LUX	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							GPLF4(S) GP S.à. r.l.	.LUX	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							PREIF Holdings Limited Partnership	.GBR	NIA	Baring Asset Management 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 LLC	Ownership	100.000	MMLIC		
.0000			81-2244465				Chassis Acquisition Holding LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	30.000	MMLIC		
.0000			81-4258759				CRA Aircraft Holding LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	40.000	MMLIC		
.0000			81-4258759				CRA Aircraft Holding LLC	.DE	NIA	Barings LLC	Influence		MMLIC		
.0000			83-0560183				Aland Royalty Holdings LP	.DE	NIA	MassMutual Holding LLC	Ownership/Influence	26.700	MMLIC		
.0000			83-0560183				Aland Royalty Holdings LP	.DE	NIA	Barings LLC	Management		MMLIC		
.0000			82-2932156				GASL Holdings LLC	.DE	NIA	MassMutual Holding LLC	Ownership	11.300	MMLIC		
.0000			82-2932156				GASL Holdings LLC	.DE	NIA	Barings LLC	Board		MMLIC		
.0000			46-2344300				Intermodal Holdings II LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	18.000	MMLIC		
.0000			46-2344300				Intermodal Holdings II LLC	.DE	NIA	Barings LLC	Management		MMLIC		
.0000			47-3055009				Milestone Acquisition Holding, LLC.	.DE	NIA	MassMutual Holding LLC	Ownership/Influence	19.800	MMLIC		
.0000							Novation Companies, Inc.	.MD	NIA	Massachusetts Mutual Life Insurance Company	Ownership	17.100	MMLIC		
.0000							Novation Companies, Inc.	.MD	NIA	Barings LLC	Influence		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							Tamiami Citrus, LLC	.DE	NIA	Barings LLC	Management/Board		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		

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

1	2	3	4	5	6	7	8	9	10	11	12 Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	13 If Control is Owner- ship Provide Percen- tage	14 Ultimate Controlling Entity(ies)/Person(s)	15 Is an SCA Filing Re- quired? (Yes/No)	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 Loca- tion	Rela- tion- ship to Reporting Entity	Directly Controlled by (Name of Entity/Person)					
.0000			46-0687392				EIP Holdings I, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	29.000	MMLIC		
.0000							Validus Holding Company LLC	DE	NIA	Barings LLC	Ownership	40.400	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 Infiniti Fund Management LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Hotel Opportunity Venture I GP, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	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 Emerging Generation Fund GP II, 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			04-1590850				Barings Global Investment Funds (U.S.) Management LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							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.	CYM	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000			84-3784245				Barings Emerging Generation Fund LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	39.300	MMLIC		
.0000			84-3784245				Barings Emerging Generation Fund LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Energy Infrastructure Advisors, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Centre Street CLO Equity Partnership GP, 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 II Management, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings North American Private Loan Fund III Management, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Global Special Situations Credit Fund 4 GP (Delaware) LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings - MM Revolver Fund GP LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							BMT RE Debt Fund GP 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		
.0000							Barings GPSF	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000			84-5063008				Barings Small Business Fund LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	33.600	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							BH0V1 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							BIG Real Estate Incentive I LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000							BIG Real Estate Incentive II 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							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		

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 Percen-tage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Yes/No)	*
.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							RECSA-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							Somerset Special Opportunities Management LLC	.DE	.NIA	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850					.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										Massachusetts Mutual Life Insurance Company					
.0000			04-3313782				MassMutual International LLC	.DE	.NIA	Company	Ownership	100.000	MMLIC		
.0000							MassMutual Solutions LLC	.DE	.NIA	MassMutual International LLC	Ownership	100.000	MMLIC		
.0000							Haven Technologies Asia Limited	.HKG	.NIA	MassMutual Solutions 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							Massachusetts Mutual Life Insurance Company					
.0000							100 w. 3rd Street LLC	.DE	.NIA	Company	Ownership	100.000	MMLIC		
.0000			04-1590850				2160 Grand Manager LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	5.000	MMLIC		
.0000										Massachusetts Mutual Life Insurance Company					
.0000			82-2432216				300 South Tryon Hotel LLC	.DE	.NIA	Company	Ownership	100.000	MMLIC		
.0000										Massachusetts Mutual Life Insurance Company					
.0000			04-1590850				300 South Tryon LLC	.DE	.NIA	Company	Ownership	100.000	MMLIC		
.0000										Massachusetts Mutual Life Insurance Company					
.0000							Almack Mezzanine Fund II Unleveraged LP	.GBR	.NIA	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							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	Company	Ownership	100.000	MMLIC		
.0000			61-1902329				Barings Affordable Housing Mortgage Fund III LLC	.DE	.NIA	Barings LLC	Management		MMLIC		
.0000							Barings Affordable Housing Mortgage Fund III LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	99.900	MMLIC		
.0000			85-3036663				Barings Affordable Housing Mortgage Fund III LLC	.DE	.NIA	Barings LLC	Management		MMLIC		
.0000			85-3036663				Barings Asset-Based Income Fund (US) LP	.DE	.NIA	MassMutual Holding LLC	Ownership/Influence	11.200	MMLIC		
.0000			36-4868350				Barings Asset-Based Income Fund (US) LP	.DE	.NIA	C.M. Life Insurance Company	Ownership/Influence	1.100	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	50.700	MMLIC		
.0000							Barings Emerging Markets Corporate Bond Fund	.IRL	.NIA	Barings LLC	Ownership	16.400	MMLIC		

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 Owner-ship Provide Percen-tage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Yes/No)	*
.0000							Barings European Real Estate Debt Income Fund	.LUX	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	70.200	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	MassMutual Holding LLC	Ownership/Influence	28.500	MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	.DE	.NIA	C.M. Life Insurance Company	Ownership	1.500	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	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	.JRL	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	54.400	MMLIC		
.0000							Barings US High Yield Bond Fund	.JRL	.NIA	Barings LLC	Management		MMLIC		
.0000							Babson CLO Ltd. 2013-I	.CYM	.NIA	Barings LLC	Influence		MMLIC		2
.0000							Babson CLO Ltd. 2015-I	.CYM	.NIA	Barings LLC	Influence		MMLIC		3
.0000							Babson CLO Ltd. 2015-II	.CYM	.NIA	Barings LLC	Influence		MMLIC		4
.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							Barings CLO 2021-III	.CYM	.NIA	Barings LLC	Influence		MMLIC		
.0000			98-1624360				Barings CLO 2022-I	.CYM	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	6.400	MMLIC		
.0000							Barings CLO 2022-II	.CYM	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	21.900	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			36-037260H				Barings Euro CLO 2019-I BV	.JRL	.NIA	Barings LLC	Influence		MMLIC		
.0000							Barings Euro CLO 2019-II BV	.JRL	.NIA	Barings LLC	Influence		MMLIC		
.0000							Barings Euro CLO 2020-I DAC	.JRL	.NIA	Barings LLC	Influence		MMLIC		
.0000			37-15576VH				Barings Euro CLO 2021-I DAC	.JRL	.NIA	Barings LLC	Influence		MMLIC		
.0000							Barings Euro CLO 2021-II DAC	.JRL	.NIA	Barings LLC	Influence		MMLIC		
.0000							Barings Euro CLO 2021-III DAC	.JRL	.NIA	Barings LLC	Influence		MMLIC		
.0000			81-0841854				Barings CLO Investment Partners LP	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	95.200	MMLIC		
.0000			81-0841854				Barings CLO Investment Partners LP	.DE	.NIA	Barings LLC	Management		MMLIC		
.0000			88-3792609				Barings Centre Street CLO Equity Partnership LP	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	27.600	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2022 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
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.0000							Barings Euro Value Add II (BREEVA II)LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	29.900	MMLIC		
.0000							Barings Euro Value Add II (BREEVA II) .....	.LUX	NIA	C.M. Life Insurance Company	Ownership.....	2.600	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	44.200	MMLIC		
.0000							Barings Real Estate European Value Add I SCSp .....	.GBR	NIA	C.M. Life Insurance Company	Ownership.....	4.900	MMLIC		
.0000							Barings Real Estate European Value Add I SCSp .....	.GBR	NIA	Barings LLC	Management.....		MMLIC		
.0000							Barings Real Estate Debt Income Fund LP .....	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	82.800	MMLIC		
.0000			85-3449260				Barings Real Estate Debt Income Fund LP .....	.DE	NIA	C.M. Life Insurance Company	Influence.....		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 .....	.INC	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	Baring Asset Management Limited	Management.....		MMLIC		
.0000			98-1332384				Barings Global Dividends Champion Fund .....	.IRL	NIA	Barings LLC	Management.....		MMLIC		
.0000							Barings LLC .....	.IRL		Barings LLC			MMLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP .....	.DE	NIA	MassMutual Holding LLC	Ownership/Influence	26.200	MMLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP .....	.DE	NIA	C.M. Life Insurance Company	Ownership.....	7.000	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	MassMutual Holding LLC	Ownership/Influence	18.700	MMLIC		
.0000							Barings Global Special Situations Credit 4 Delaware .....	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership.....	69.600	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.....	15.700	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							Barings Global Technology Equity Fund .....	.IRL	NIA	Barings LLC	Ownership/Influence	73.700	MMLIC		
.0000			87-0977058				Barings Hotel Opportunity Venture .....	.CT	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	54.500	MMLIC		
.0000			87-0977058				Barings Hotel Opportunity Venture .....	.CT	NIA	Barings LLC	Management.....		MMLIC		
.0000							Barings Innovations & Growth Real Estate Fund .....	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership.....	34.800	MMLIC		
.0000			86-3661023				Barings Innovations & Growth Real Estate Fund .....	.DE	NIA	C.M. Life Insurance Company	Ownership.....	0.500	MMLIC		
.0000			86-3661023				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		
.0000			38-4010344				Barings North American Private Loan Fund LP .....	.DE	NIA	MassMutual Holding LLC	Ownership/Influence	37.300	MMLIC		
.0000			38-4010344				Barings North American Private Loan Fund LP .....	.DE	NIA	Baring Asset Management Limited	Management.....		MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2022 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
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.0000			98-1332384				Barings RE Credit Strategies VII LP	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	33.100	MMLIC		
.0000			98-1332384				Barings RE Credit Strategies VII LP	.DE	.NIA	Baring Asset Management Limited	Management		MMLIC		
.0000			98-1567942				Barings Target Yield Infrastructure Debt Fund	.LUX	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	32.700	MMLIC		
.0000			98-1567942				Barings Target Yield Infrastructure Debt Fund	.LUX	.NIA	Baring Asset Management Limited	Management		MMLIC		
.0000			87-1262754				Barings Transportation Fund LP	.DE	.NIA	MassMutual Holding LLC	Ownership/Influence	11.300	MMLIC		
.0000			87-1262754				Barings Transportation Fund LP	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	8.200	MMLIC		
.0000							Braemar Energy Ventures I, L.P.	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	89.000	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	8.800	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			46-5001122				Barings European Private Loan Fund III A	.LUX	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	44.500	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	22.700	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	27.600	MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	.DE	.NIA	C.M. Life Insurance Company	Ownership	3.100	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			90-0991195		0001597511		Gateway Mezzanine Partners II LP	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	34.800	MMLIC		
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	.DE	.NIA	C.M. Life Insurance Company	Ownership	5.200	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	68.200	MMLIC		
.0000							GIA EU Holdings - Emerson JV Sarl	.LUX	.NIA	Barings LLC	Management		MMLIC		
.0000			38-4041011				JPMCC Commercial Mortgage Securities Trust 2017-JP7	.NY	.NIA	Barings LLC	Influence		MMLIC		
.0000			38-4032059				JPMDB 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	19.700	MMLIC		
.0000			46-4255307				Marco Hotel LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Martello Re	.BMU	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	27.450	MMLIC		
.0000			04-1590850				Miami Douglas One GP LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2022 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
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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	Influence	0.000	MMLIC		
0000			04-1590850				Miami Douglas Two GP LLC	DE	NIA	C.M. Life Insurance Company	Influence	0.000	MMLIC		
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				Miami Douglas Two LP	DE	NIA	C.M. Life Insurance Company	Ownership	10.000	MMLIC		
0000			04-1590850				Miami Douglas Three MM LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
0000			87-4021641				MM BIG Peninsula Co-Invest Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	27.000	MMLIC		
0000			87-4021641				MM BIG Peninsula Co-Invest Member LLC	DE	NIA	C.M. Life Insurance Company	Ownership	0.800	MMLIC		
0000			85-3886824				NYDIG Digital Assets Fund II LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	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			04-1590850				MM Direct Private Invetment Holding	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			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			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	16.900	MMLIC		
0000			41-2280129				Tower Square Capital Partners IIIA, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	96.100	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			04-1590850				Trailside MM Member II LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	47.100	MMLIC		
0000			83-1325764				Washington Gateway Two LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	89.300	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	83.900	MMLIC		
0000			32-0574045				Washington Gateway Three LLC	DE	NIA	C.M. Life Insurance Company	Ownership	11.400	MMLIC		
0000			88-3861481				West 37th Street Hotel LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	93.800	MMLIC		
0000			88-3861481				West 37th Street Hotel LLC	DE	NIA	C.M. Life Insurance Company	Ownership	6.300	MMLIC		
0000							Babson Capital Loan Strategies Master Fund LP	CYM	NIA	Barings LLC	Management		MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2022 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
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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	12.000	MMLIC		
0000			47-3790192				Barings Global High Yield Fund	MA	NIA	Barings LLC	Management		MMLIC		
0000							CCIC Fund	CHN	NIA	Barings LLC	Ownership/Influence	71.400	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		
0000			04-1590850				Wood Creek Venture Fund LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	40.000	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	50.000	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			20-0348173				CREA/PPC Venture LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	31.300	MMLIC		
0000			82-2783393				Danville Riverwalk Venture, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	94.400	MMLIC		
0000			04-1590850				Euro Real Estate Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	50.000	MMLIC		
0000			20-3347091				Fan Pier Development LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	67.300	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 Brookhaven Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MMLIC		
0000			04-1590850				MM East South Crossing Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MMLIC		

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 Percen-tage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Yes/No)	*
..0000 ..			04-1590850 ..				MM Horizon Savannah Member LLC ..	..DE ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Ownership.....	88.700 ..	MMLIC ..		
..0000 ..			04-1590850 ..				MM Horizon Savannah Member LLC ..	..DE ..	..NIA ..	C.M. Life Insurance Company ..	Ownership.....	3.700 ..	MMLIC ..		
..0000 ..			04-1590850 ..				MM National Self-Storage Program Member LLC ..	..DE ..	..NIA ..	C.M. Life Insurance Company ..	Ownership.....	98.000 ..	MMLIC ..		
..0000 ..			04-1590850 ..				MM 1400 E 4th Street Member LLC ..	..DE ..	..NIA ..	C.M. Life Insurance Company ..	Ownership.....	96.000 ..	MMLIC ..		
..0000 ..			80-0948028 ..				One Harbor Shore LLC ..	..DE ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Ownership.....	10.800 ..	MMLIC ..		
..0000 ..			80-0948028 ..				One Harbor Shore LLC ..	..DE ..	..NIA ..	C.M. Life Insurance Company ..	Ownership.....	6.000 ..	MMLIC ..		
..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.....	5.000 ..	MMLIC ..		
..0000 ..							Salomon Brothers Commercial Mortgage Trust 2001-MM ..	..DE ..	..NIA ..	Barings Real Estate Advisers LLC ..	Influence.....		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 ..			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 ..			51-0529328 ..		0000927972 ..	OQ ..	MassMutual Premier Main Street Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Ownership.....	90.300 ..	MMLIC ..		
..0000 ..			26-3229251 ..		0000927972 ..	OQ ..	MassMutual Premier Strategic Emerging Markets Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Ownership.....	27.200 ..	MMLIC ..		
..0000 ..			04-3512593 ..		0000916053 ..	OQ ..	MassMutual Select Fundamental Growth Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Ownership.....	2.000 ..	MMLIC ..		
..0000 ..			42-1710935 ..		0000916053 ..	OQ ..	MassMutual Select Mid-Cap Value Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Ownership.....	27.800 ..	MMLIC ..		
..0000 ..			02-0769954 ..		0000916053 ..	OQ ..	MassMutual Select Small Capital Value Equity Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Influence.....	0.000 ..	MMLIC ..		
..0000 ..			04-3584140 ..		0000916053 ..	OQ ..	MassMutual Select Small Company Value Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Ownership.....	9.300 ..	MMLIC ..		
..0000 ..			82-3347422 ..		0000916053 ..	OQ ..	MassMutual Select T. Rowe Price Retirement 2005 Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Ownership.....	5.700 ..	MMLIC ..		
..0000 ..			82-3355639 ..		0000916053 ..	OQ ..	MassMutual Select T. Rowe Price Retirement 2010 Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Influence.....	0.000 ..	MMLIC ..		
..0000 ..			82-3382389 ..		0000916053 ..	OQ ..	MassMutual Select T. Rowe Price Retirement 2015 Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Influence.....	0.000 ..	MMLIC ..		
..0000 ..			82-3396442 ..		0000916053 ..	OQ ..	MassMutual Select T. Rowe Price Retirement 2020 Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Influence.....	0.000 ..	MMLIC ..		
..0000 ..			82-3417420 ..		0000916053 ..	OQ ..	MassMutual Select T. Rowe Price Retirement 2025 Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Influence.....	0.000 ..	MMLIC ..		
..0000 ..			82-3430358 ..		0000916053 ..	OQ ..	MassMutual Select T. Rowe Price Retirement 2030 Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Influence.....	0.000 ..	MMLIC ..		
..0000 ..			82-3439837 ..		0000916053 ..	OQ ..	MassMutual Select T. Rowe Price Retirement 2035 Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Influence.....	0.000 ..	MMLIC ..		
..0000 ..			82-3451779 ..		0000916053 ..	OQ ..	MassMutual Select T. Rowe Price Retirement 2040 Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Influence.....	0.000 ..	MMLIC ..		
..0000 ..			82-3472295 ..		0000916053 ..	OQ ..	MassMutual Select T. Rowe Price Retirement 2045 Fund ..	..MA ..	..NIA ..	Massachusetts Mutual Life Insurance Company ..	Influence.....	0.000 ..	MMLIC ..		

STATEMENT AS OF SEPTEMBER 30, 2022 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 Loca-tion	Rela-tion-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 Owner-ship Provide Percen-tage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Yes/No)	*
.0000			82-3481715		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2050 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			82-3502011		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2055 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			82-3525148		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2060 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			82-3533944		0000916053	OQ	MassMutual Select T. Rowe Price Retirement Balanced Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			46-4257056				MML Series International Equity Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence	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	Influence	0.000	MMLIC		
.0000			47-3544629				MML Series II Equity Rotation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.900	MMLIC		
.0000			47-3559064				MML Series II Special Situations Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	97.500	MMLIC		
.0000			27-1933389		0000916053	OQ	MassMutual RetireSMART 2035 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	2.800	MMLIC		
.0000			27-1932769		0000916053	OQ	MassMutual RetireSMART 2045 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	6.200	MMLIC		
.0000			46-3289207		0000916053	OQ	MassMutual RetireSMART 2055 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	22.700	MMLIC		
.0000			47-5326235		0000916053	OQ	MassMutual RetireSMART 2060 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	51.300	MMLIC		
.0000			45-1618155		0000916053	OQ	MassMutual 20/80 Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			45-1618222		0000916053	OQ	MassMutual 80/20 Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	59.000	MMLIC		
.0000			03-0532464		0000916053	OQ	MassMutual RetireSMART In Retirement Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	2.100	MMLIC		
.0000			45-1618262		0000916053	OQ	MassMutual 40/60 Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			45-1618046		0000916053	OQ	MassMutual 60/40 Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	82.500	MMLIC		

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

STATEMENT AS OF SEPTEMBER 30, 2022 OF THE MML Bay State Life Insurance Company

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

AUGUST FILING

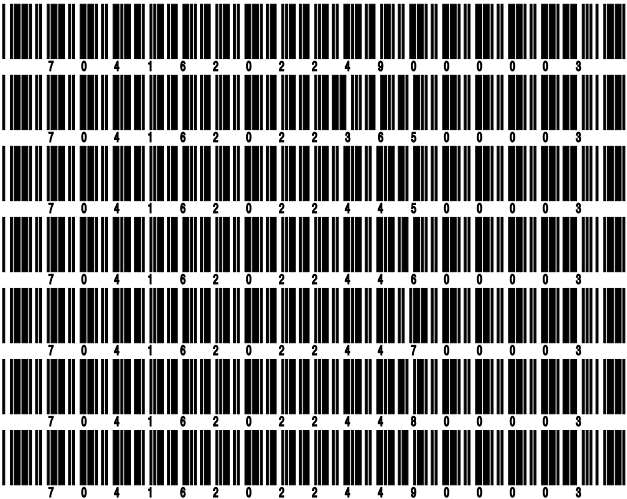
9. Will the regulator-only (non-public) Communication of Internal Control Related Matters Noted in Audit be filed with the state of domicile and electronically with the NAIC (as a regulator-only non-public document) by August 1? The response for 1st and 3rd quarters should be N/A. A NO response resulting with a bar code is only appropriate in the 2nd quarter.	N/A
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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

SCHEDULE A - VERIFICATION

Real Estate

	1	2
	Year to Date	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)		

SCHEDULE B - VERIFICATION

Mortgage Loans

	1	2
	Year to Date	Prior Year Ended December 31
1. Book value/recorded investment excluding accrued interest, December 31 of prior year	1,771,148	2,090,393
2. Cost of acquired:		
2.1 Actual cost at time of acquisition		
2.2 Additional investment made after acquisition	916	735
3. Capitalized deferred interest and other		
4. Accrual of discount	(791)	(6,782)
5. Unrealized valuation increase (decrease)		
6. Total gain (loss) on disposals		
7. Deduct amounts received on disposals	178,180	311,249
8. Deduct amortization of premium and mortgage interest points and commitment fees	393	1,949
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)	1,592,701	1,771,148
12. Total valuation allowance		
13. Subtotal (Line 11 plus Line 12)	1,592,701	1,771,148
14. Deduct total nonadmitted amounts		
15. Statement value at end of current period (Line 13 minus Line 14)	1,592,701	1,771,148

SCHEDULE BA - VERIFICATION

Other Long-Term Invested Assets

	1	2
	Year to Date	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)		

SCHEDULE D - VERIFICATION

Bonds and Stocks

	1	2
	Year to Date	Prior Year Ended December 31
1. Book/adjusted carrying value of bonds and stocks, December 31 of prior year	218,740,303	243,446,731
2. Cost of bonds and stocks acquired	4,573	7,438,555
3. Accrual of discount	282,702	513,258
4. Unrealized valuation increase (decrease)	(130,230)	24,932
5. Total gain (loss) on disposals	(108,635)	1,106,259
6. Deduct consideration for bonds and stocks disposed of	4,872,916	33,487,123
7. Deduct amortization of premium	214,090	293,028
8. Total foreign exchange change in book/adjusted carrying value		
9. Deduct current year's other than temporary impairment recognized	22,541	11,926
10. Total investment income recognized as a result of prepayment penalties and/or acceleration fees	297,248	2,645
11. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9+10)	213,976,414	218,740,303
12. Deduct total nonadmitted amounts		
13. Statement value at end of current period (Line 11 minus Line 12)	213,976,414	218,740,303

STATEMENT AS OF SEPTEMBER 30, 2022 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
BONDS								
1. NAIC 1 (a)	138,158,976	15,070,416	22,798,235	1,831,845	148,169,574	138,158,976	132,263,002	147,051,060
2. NAIC 2 (a)	209,462,168	611,972,423	588,107,412	(1,017,377)	189,665,421	209,462,168	232,309,802	176,482,357
3. NAIC 3 (a)	6,504,591		3,442	(202)	6,510,565	6,504,591	6,500,947	6,514,665
4. NAIC 4 (a)	1,230,997			(43)	1,230,912	1,230,997	1,230,954	1,230,831
5. NAIC 5 (a)	499,586		1,098	1,446	500,237	499,586	499,934	499,621
6. NAIC 6 (a)	925,486			(110,207)	870,362	925,486	815,279	937,908
7. Total Bonds	356,781,804	627,042,839	610,910,187	705,462	346,947,071	356,781,804	373,619,918	332,716,442
PREFERRED STOCK								
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	356,781,804	627,042,839	610,910,187	705,462	346,947,071	356,781,804	373,619,918	332,716,442

(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 \$; NAIC 2 \$159,659,900 ; NAIC 3 \$ NAIC 4 \$; NAIC 5 \$; NAIC 6 \$

SCHEDULE DA - PART 1

Short-Term Investments

	1	2	3	4	5
	Book/Adjusted Carrying Value	Prior Year Value	Actual Cost	Interest Collected Year-to-Date	Paid for Accrued Interest Year-to-Date
7709999999 Totals		XX			

NONE

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	5,999,418	56,062,226
2. Cost of short-term investments acquired		106,423,200
3. Accrual of discount	582	112,551
4. Unrealized valuation increase (decrease)		
5. Total gain (loss) on disposals		408
6. Deduct consideration received on disposals	6,000,000	156,598,967
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)		5,999,418
11. Deduct total nonadmitted amounts		
12. Statement value at end of current period (Line 10 minus Line 11)		5,999,418

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	107,988,780	49,485,532
2. Cost of cash equivalents acquired	2,258,622,926	1,333,369,363
3. Accrual of discount	1,246,091	132,828
4. Unrealized valuation increase (decrease)		
5. Total gain (loss) on disposals	(573)	150
6. Deduct consideration received on disposals	2,208,197,324	1,274,999,093
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)	159,659,900	107,988,780
11. Deduct total nonadmitted amounts		
12. Statement value at end of current period (Line 10 minus Line 11)	159,659,900	107,988,780