



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

QUARTERLY STATEMENT

AS OF MARCH 31, 2021

OF THE CONDITION AND AFFAIRS OF THE

MML Bay State Life Insurance Company

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

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

Country of Domicile United States of America

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

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

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

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

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

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

Internet Website Address www.massmutual.com

Statutory Statement Contact Trevor Wade Gordon, 617-695-4321
(Name) (Area Code) (Telephone Number)
tgordon@MassMutual.com 413-226-4086
(E-mail Address) (FAX Number)

OFFICERS

President and Chief Executive Officer Roger William Crandall Treasurer Todd Garrett Picken
Secretary Akintokunbo Akinbajo Appointed Actuary Vy Quoc Ho

OTHER

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

DIRECTORS OR TRUSTEES

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

State of Massachusetts SS:
County of Hampden

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

Roger William Crandall
President and Chief Executive Officer

Akintokunbo Akinbajo
Secretary

Todd Garrett Picken
Treasurer

Subscribed and sworn to before me this _____ day of _____

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

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

ASSETS

| | Current Statement Date | | | 4 December 31 Prior Year Net Admitted Assets |
|---|------------------------|-------------------------|---|---|
| | 1 Assets | 2 Nonadmitted Assets | 3 Net Admitted Assets (Cols. 1 - 2) | |
| 1. Bonds | 234,329,357 | | 234,329,357 | 243,446,730 |
| 2. Stocks: | | | | |
| 2.1 Preferred stocks | | | | |
| 2.2 Common stocks | | | | |
| 3. Mortgage loans on real estate: | | | | |
| 3.1 First liens | 2,022,129 | | 2,022,129 | 2,090,393 |
| 3.2 Other than first liens | | | | |
| 4. Real estate: | | | | |
| 4.1 Properties occupied by the company (less \$ encumbrances) | | | | |
| 4.2 Properties held for the production of income (less \$ encumbrances) | | | | |
| 4.3 Properties held for sale (less \$ encumbrances) | | | | |
| 5. Cash (\$(2,063,196)), cash equivalents (\$54,489,692) and short-term investments (\$69,970,807) | 122,397,303 | | 122,397,303 | 103,615,595 |
| 6. Contract loans (including \$ premium notes) | 91,601,733 | | 91,601,733 | 92,724,451 |
| 7. Derivatives | | | | |
| 8. Other invested assets | | | | |
| 9. Receivables for securities | 76,493 | | 76,493 | |
| 10. Securities lending reinvested collateral assets | | | | |
| 11. Aggregate write-ins for invested assets | | | | |
| 12. Subtotals, cash and invested assets (Lines 1 to 11) | 450,427,015 | | 450,427,015 | 441,877,169 |
| 13. Title plants less \$ charged off (for Title insurers only) | | | | |
| 14. Investment income due and accrued | 4,166,695 | | 4,166,695 | 4,048,880 |
| 15. Premiums and considerations: | | | | |
| 15.1 Uncollected premiums and agents' balances in the course of collection | | | | |
| 15.2 Deferred premiums, agents' balances and installments booked but deferred and not yet due (including \$ earned but unbilled premiums) | (2,385,254) | | (2,385,254) | (2,277,498) |
| 15.3 Accrued retrospective premiums (\$) and contracts subject to redetermination (\$) | | | | |
| 16. Reinsurance: | | | | |
| 16.1 Amounts recoverable from reinsurers | 9,586,167 | | 9,586,167 | 7,479,473 |
| 16.2 Funds held by or deposited with reinsured companies | | | | |
| 16.3 Other amounts receivable under reinsurance contracts | 36,047,147 | | 36,047,147 | 35,715,673 |
| 17. Amounts receivable relating to uninsured plans | | | | |
| 18.1 Current federal and foreign income tax recoverable and interest thereon | 2,729,187 | | 2,729,187 | 3,991,574 |
| 18.2 Net deferred tax asset | 4,081,373 | 1,901,240 | 2,180,133 | 1,970,108 |
| 19. Guaranty funds receivable or on deposit | 157,805 | | 157,805 | 159,879 |
| 20. Electronic data processing equipment and software | | | | |
| 21. Furniture and equipment, including health care delivery assets (\$) | | | | |
| 22. Net adjustment in assets and liabilities due to foreign exchange rates | | | | |
| 23. Receivables from parent, subsidiaries and affiliates | 185,516 | | 185,516 | 173,473 |
| 24. Health care (\$) and other amounts receivable | | | | |
| 25. Aggregate write-ins for other than invested assets | 4,051 | | 4,051 | 149,210 |
| 26. Total assets excluding Separate Accounts, Segregated Accounts and Protected Cell Accounts (Lines 12 to 25) | 504,999,702 | 1,901,240 | 503,098,462 | 493,287,942 |
| 27. From Separate Accounts, Segregated Accounts and Protected Cell Accounts | 4,838,289,450 | | 4,838,289,450 | 4,858,831,848 |
| 28. Total (Lines 26 and 27) | 5,343,289,152 | 1,901,240 | 5,341,387,912 | 5,352,119,790 |
| 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 | 4,051 | | 4,051 | 149,210 |
| 2502. | | | | |
| 2503. | | | | |
| 2598. Summary of remaining write-ins for Line 25 from overflow page | | | | |
| 2599. Totals (Lines 2501 through 2503 plus 2598)(Line 25 above) | 4,051 | | 4,051 | 149,210 |

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company
LIABILITIES, SURPLUS AND OTHER FUNDS

| | 1 Current Statement Date | 2 December 31 Prior Year |
|---|--------------------------------|--------------------------------|
| 1. Aggregate reserve for life contracts \$142,968,613 less \$ included in Line 6.3 (including \$126,301,659 Modco Reserve)..... | 142,968,613 | 143,124,981 |
| 2. Aggregate reserve for accident and health contracts (including \$ Modco Reserve)..... | | |
| 3. Liability for deposit-type contracts (including \$ Modco Reserve)..... | 12,991,725 | 13,771,784 |
| 4. Contract claims: | | |
| 4.1 Life | 4,236,504 | 7,542,397 |
| 4.2 Accident and health | | |
| 5. Policyholders' dividends/refunds to members \$ and coupons \$ due and unpaid | | |
| 6. Provision for policyholders' dividends, refunds to members and coupons payable in following calendar year - estimated amounts: | | |
| 6.1 Policyholders' dividends and refunds to members apportioned for payment (including \$ Modco) | | |
| 6.2 Policyholders' dividends and refunds to members not yet apportioned (including \$ Modco) | | |
| 6.3 Coupons and similar benefits (including \$ Modco)..... | | |
| 7. Amount provisionally held for deferred dividend policies not included in Line 6 | | |
| 8. Premiums and annuity considerations for life and accident and health contracts received in advance less \$ discount; including \$ accident and health premiums | | |
| 9. Contract liabilities not included elsewhere: | | |
| 9.1 Surrender values on canceled contracts | | |
| 9.2 Provision for experience rating refunds, including the liability of \$ accident and health experience rating refunds of which \$ is for medical loss ratio rebate per the Public Health Service Act | 18,833,707 | 20,144,004 |
| 9.3 Other amounts payable on reinsurance, including \$ assumed and \$13,289,544 ceded | 13,289,544 | 8,434,112 |
| 9.4 Interest Maintenance Reserve | 783,779 | 606,773 |
| 10. Commissions to agents due or accrued-life and annuity contracts \$, accident and health \$ and deposit-type contract funds \$ | 20,123 | 20,643 |
| 11. Commissions and expense allowances payable on reinsurance assumed | | |
| 12. General expenses due or accrued | 1,002 | |
| 13. Transfers to Separate Accounts due or accrued (net) (including \$(383,314) accrued for expense allowances recognized in reserves, net of reinsured allowances) | 20,077,207 | 13,792,358 |
| 14. Taxes, licenses and fees due or accrued, excluding federal income taxes | 175,231 | 171,288 |
| 15.1 Current federal and foreign income taxes, including \$ on realized capital gains (losses) | | |
| 15.2 Net deferred tax liability | | |
| 16. Unearned investment income | | |
| 17. Amounts withheld or retained by reporting entity as agent or trustee | 11,584 | 61,388 |
| 18. Amounts held for agents' account, including \$ agents' credit balances | | |
| 19. Remittances and items not allocated | 188,046 | 1,352,348 |
| 20. Net adjustment in assets and liabilities due to foreign exchange rates | | |
| 21. Liability for benefits for employees and agents if not included above | | |
| 22. Borrowed money \$ and interest thereon \$ | | |
| 23. Dividends to stockholders declared and unpaid | | |
| 24. Miscellaneous liabilities: | | |
| 24.01 Asset valuation reserve | 6,959,496 | 7,192,889 |
| 24.02 Reinsurance in unauthorized and certified (\$) companies | | |
| 24.03 Funds held under reinsurance treaties with unauthorized and certified (\$) reinsurers | | |
| 24.04 Payable to parent, subsidiaries and affiliates | 929,481 | 2,169,121 |
| 24.05 Drafts outstanding | | |
| 24.06 Liability for amounts held under uninsured plans | | |
| 24.07 Funds held under coinsurance | | |
| 24.08 Derivatives | | |
| 24.09 Payable for securities | | |
| 24.10 Payable for securities lending | | |
| 24.11 Capital notes \$ and interest thereon \$ | | |
| 25. Aggregate write-ins for liabilities | 254,485 | 394,330 |
| 26. Total liabilities excluding Separate Accounts business (Lines 1 to 25) | 221,720,526 | 218,778,416 |
| 27. From Separate Accounts Statement | 4,838,289,450 | 4,858,831,848 |
| 28. Total liabilities (Lines 26 and 27) | 5,060,009,976 | 5,077,610,264 |
| 29. Common capital stock | 2,500,200 | 2,500,200 |
| 30. Preferred capital stock | | |
| 31. Aggregate write-ins for other than special surplus funds | | |
| 32. Surplus notes | | |
| 33. Gross paid in and contributed surplus | 143,736,914 | 143,736,914 |
| 34. Aggregate write-ins for special surplus funds | | |
| 35. Unassigned funds (surplus) | 135,140,822 | 128,272,412 |
| 36. Less treasury stock, at cost: | | |
| 36.1 shares common (value included in Line 29 \$) | | |
| 36.2 shares preferred (value included in Line 30 \$) | | |
| 37. Surplus (Total Lines 31+32+33+34+35-36) (including \$ in Separate Accounts Statement) | 278,877,736 | 272,009,326 |
| 38. Totals of Lines 29, 30 and 37 | 281,377,936 | 274,509,526 |
| 39. Totals of Lines 28 and 38 (Page 2, Line 28, Col. 3) | 5,341,387,912 | 5,352,119,790 |
| DETAILS OF WRITE-INS | | |
| 2501. Miscellaneous liabilities | 200,833 | 193,420 |
| 2502. Funds awaiting escheat | 53,652 | 200,910 |
| 2503. | | |
| 2598. Summary of remaining write-ins for Line 25 from overflow page | | |
| 2599. Totals (Lines 2501 through 2503 plus 2598)(Line 25 above) | 254,485 | 394,330 |
| 3101. | | |
| 3102. | | |
| 3103. | | |
| 3198. Summary of remaining write-ins for Line 31 from overflow page | | |
| 3199. Totals (Lines 3101 through 3103 plus 3198)(Line 31 above) | | |
| 3401. | | |
| 3402. | | |
| 3403. | | |
| 3498. Summary of remaining write-ins for Line 34 from overflow page | | |
| 3499. Totals (Lines 3401 through 3403 plus 3498)(Line 34 above) | | |

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SUMMARY OF OPERATIONS

| | 1 Current Year To Date | 2 Prior Year To Date | 3 Prior Year Ended December 31 |
|---|------------------------------|----------------------------|--------------------------------------|
| 1. Premiums and annuity considerations for life and accident and health contracts | 3,709,691 | (1,956,672) | (4,338,246) |
| 2. Considerations for supplementary contracts with life contingencies | | | 3,860 |
| 3. Net investment income | 3,403,657 | 4,243,531 | 15,179,564 |
| 4. Amortization of Interest Maintenance Reserve (IMR) | 79,243 | 128,492 | 173,503 |
| 5. Separate Accounts net gain from operations excluding unrealized gains or losses | | | |
| 6. Commissions and expense allowances on reinsurance ceded | 2,617,256 | 2,565,305 | 10,226,565 |
| 7. Reserve adjustments on reinsurance ceded | (21,573,462) | (20,100,908) | (70,012,768) |
| 8. Miscellaneous Income: | | | |
| 8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts | 18,811,922 | 19,512,252 | 67,246,889 |
| 8.2 Charges and fees for deposit-type contracts | | | |
| 8.3 Aggregate write-ins for miscellaneous income | 120,707 | 465,182 | (886,736) |
| 9. Totals (Lines 1 to 8.3) | 7,169,014 | 4,857,182 | 17,592,631 |
| 10. Death benefits | 21,198,035 | 6,835,182 | 38,973,328 |
| 11. Matured endowments (excluding guaranteed annual pure endowments) | | | |
| 12. Annuity benefits | 223,411 | 635,707 | 1,838,913 |
| 13. Disability benefits and benefits under accident and health contracts | 88,375 | 93,785 | 353,305 |
| 14. Coupons, guaranteed annual pure endowments and similar benefits | | | |
| 15. Surrender benefits and withdrawals for life contracts | 1,148,120 | 878,345 | 3,793,836 |
| 16. Group conversions | | | |
| 17. Interest and adjustments on contract or deposit-type contract funds | (634,437) | 183,827 | 1,420,055 |
| 18. Payments on supplementary contracts with life contingencies | 8,815 | 11,422 | 39,899 |
| 19. Increase in aggregate reserves for life and accident and health contracts | (156,368) | (809,972) | (2,201,567) |
| 20. Totals (Lines 10 to 19) | 21,875,950 | 7,828,296 | 44,217,769 |
| 21. Commissions on premiums, annuity considerations, and deposit-type contract funds (direct business only) | 489,013 | 521,564 | 2,045,004 |
| 22. Commissions and expense allowances on reinsurance assumed | | | |
| 23. General insurance expenses and fraternal expenses | 1,240,529 | 1,800,628 | 8,547,919 |
| 24. Insurance taxes, licenses and fees, excluding federal income taxes | 225,013 | 256,909 | 735,043 |
| 25. Increase in loading on deferred and uncollected premiums | (9,474) | 454 | 56 |
| 26. Net transfers to or (from) Separate Accounts net of reinsurance | (24,240,783) | (11,784,138) | (49,934,367) |
| 27. Aggregate write-ins for deductions | (434,425) | (410,309) | (1,550,537) |
| 28. Totals (Lines 20 to 27) | (854,176) | (1,786,596) | 4,060,886 |
| 29. Net gain from operations before dividends to policyholders and federal income taxes (Line 9 minus Line 28) | 8,023,190 | 6,643,779 | 13,531,746 |
| 30. Dividends to policyholders and refunds to members | | | |
| 31. Net gain from operations after dividends to policyholders, refunds to members and before federal income taxes (Line 29 minus Line 30) | 8,023,190 | 6,643,779 | 13,531,746 |
| 32. Federal and foreign income taxes incurred (excluding tax on capital gains) | 1,170,000 | 880,323 | 1,012,978 |
| 33. Net gain from operations after dividends to policyholders, refunds to members and federal income taxes and before realized capital gains or (losses) (Line 31 minus Line 32) | 6,853,190 | 5,763,456 | 12,518,768 |
| 34. Net realized capital gains (losses) (excluding gains (losses) transferred to the IMR) less capital gains tax of \$ 24,270 (excluding taxes of \$ 68,117 transferred to the IMR) | (28,246) | (105,616) | (133,507) |
| 35. Net income (Line 33 plus Line 34) | 6,824,945 | 5,657,840 | 12,385,260 |
| CAPITAL AND SURPLUS ACCOUNT | | | |
| 36. Capital and surplus, December 31, prior year | 274,509,526 | 293,454,322 | 293,454,322 |
| 37. Net income (Line 35) | 6,824,945 | 5,657,840 | 12,385,260 |
| 38. Change in net unrealized capital gains (losses) less capital gains tax of \$ (1,340) | (5,040) | (82,753) | (140,180) |
| 39. Change in net unrealized foreign exchange capital gain (loss) | | | |
| 40. Change in net deferred income tax | (117,498) | (103,213) | (256,559) |
| 41. Change in nonadmitted assets | 334,967 | 399,053 | 84,989 |
| 42. Change in liability for reinsurance in unauthorized and certified companies | | | |
| 43. Change in reserve on account of change in valuation basis, (increase) or decrease | | | 600,000 |
| 44. Change in asset valuation reserve | 233,392 | 683,355 | (907,693) |
| 45. Change in treasury stock | | | |
| 46. Surplus (contributed to) withdrawn from Separate Accounts during period | | | |
| 47. Other changes in surplus in Separate Accounts Statement | | | |
| 48. Change in surplus notes | | | |
| 49. Cumulative effect of changes in accounting principles | | | |
| 50. Capital changes: | | | |
| 50.1 Paid in | | | |
| 50.2 Transferred from surplus (Stock Dividend) | | | |
| 50.3 Transferred to surplus | | | |
| 51. Surplus adjustment: | | | |
| 51.1 Paid in | | | |
| 51.2 Transferred to capital (Stock Dividend) | | | |
| 51.3 Transferred from capital | | | |
| 51.4 Change in surplus as a result of reinsurance | | | |
| 52. Dividends to stockholders | | | (29,000,000) |
| 53. Aggregate write-ins for gains and losses in surplus | (402,357) | (427,653) | (1,710,613) |
| 54. Net change in capital and surplus for the year (Lines 37 through 53) | 6,868,410 | 6,126,629 | (18,944,796) |
| 55. Capital and surplus, as of statement date (Lines 36 + 54) | 281,377,936 | 299,580,950 | 274,509,526 |
| DETAILS OF WRITE-INS | | | |
| 08.301. Revenue sharing | 269,251 | 590,793 | 972,717 |
| 08.302. Miscellaneous | 172,766 | 185,038 | (174,530) |
| 08.303. Management and administrative fees | (321,310) | (310,649) | (1,684,923) |
| 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) | 120,707 | 465,182 | (886,736) |
| 2701. Miscellaneous charges to operations | (32,068) | 17,344 | 160,076 |
| 2702. Reinsurance ceded adjustment | (402,357) | (427,653) | (1,710,613) |
| 2703. | | | |
| 2798. Summary of remaining write-ins for Line 27 from overflow page | | | |
| 2799. Totals (Lines 2701 through 2703 plus 2798)(Line 27 above) | (434,425) | (410,309) | (1,550,537) |
| 5301. Reinsurance ceded adjustment | (402,357) | (427,653) | (1,710,613) |
| 5302. | | | |
| 5303. | | | |
| 5398. Summary of remaining write-ins for Line 53 from overflow page | | | |
| 5399. Totals (Lines 5301 through 5303 plus 5398)(Line 53 above) | (402,357) | (427,653) | (1,710,613) |

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

CASH FLOW

| | 1 Current Year To Date | 2 Prior Year To Date | 3 Prior Year Ended December 31 |
|---|------------------------------|----------------------------|--------------------------------------|
| Cash from Operations | | | |
| 1. Premiums collected net of reinsurance | 361,691 | (127,624) | 820,981 |
| 2. Net investment income | 3,203,635 | 4,403,654 | 15,788,731 |
| 3. Miscellaneous income | 5,689,251 | 6,843,298 | (4,994,848) |
| 4. Total (Lines 1 to 3) | 9,254,577 | 11,119,328 | 11,614,864 |
| 5. Benefit and loss related payments | 27,561,271 | 3,012,291 | 52,146,733 |
| 6. Net transfers to Separate Accounts, Segregated Accounts and Protected Cell Accounts | (30,670,791) | (11,334,545) | (61,647,092) |
| 7. Commissions, expenses paid and aggregate write-ins for deductions | (33,014,986) | 3,694,809 | 12,218,371 |
| 8. Dividends paid to policyholders | | | |
| 9. Federal and foreign income taxes paid (recovered) net of \$ tax on capital gains (losses) | | | 725,317 |
| 10. Total (Lines 5 through 9) | (36,124,506) | (4,627,445) | 3,443,329 |
| 11. Net cash from operations (Line 4 minus Line 10) | 45,379,083 | 15,746,773 | 8,171,535 |
| Cash from Investments | | | |
| 12. Proceeds from investments sold, matured or repaid: | | | |
| 12.1 Bonds | 9,522,243 | 28,781,695 | 76,001,682 |
| 12.2 Stocks | | | |
| 12.3 Mortgage loans | 59,090 | 61,826 | 262,098 |
| 12.4 Real estate | | | |
| 12.5 Other invested assets | | | |
| 12.6 Net gains or (losses) on cash, cash equivalents and short-term investments | 83 | (915) | 7,570 |
| 12.7 Miscellaneous proceeds | (76,493) | | |
| 12.8 Total investment proceeds (Lines 12.1 to 12.7) | 9,504,923 | 28,842,606 | 76,271,350 |
| 13. Cost of investments acquired (long-term only): | | | |
| 13.1 Bonds | 3,799 | 2,436,857 | 12,522,067 |
| 13.2 Stocks | | | |
| 13.3 Mortgage loans | 306 | 951 | 951 |
| 13.4 Real estate | | | |
| 13.5 Other invested assets | | | |
| 13.6 Miscellaneous applications | | | |
| 13.7 Total investments acquired (Lines 13.1 to 13.6) | 4,105 | 2,437,808 | 12,523,018 |
| 14. Net increase (or decrease) in contract loans and premium notes | (1,122,718) | (53,273) | (4,025,405) |
| 15. Net cash from investments (Line 12.8 minus Line 13.7 and Line 14) | 10,623,536 | 26,458,071 | 67,773,737 |
| 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 | 75,495 | 282,940 | (3,414,901) |
| 16.5 Dividends to stockholders | | | 29,000,000 |
| 16.6 Other cash provided (applied) | (37,296,406) | (4,737,280) | (386,834) |
| 17. Net cash from financing and miscellaneous sources (Line 16.1 through Line 16.4 minus Line 16.5 plus Line 16.6) | (37,220,911) | (4,454,340) | (32,801,735) |
| 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) | 18,781,708 | 37,750,504 | 43,143,537 |
| 19. Cash, cash equivalents and short-term investments: | | | |
| 19.1 Beginning of year | 103,615,595 | 60,472,058 | 60,472,058 |
| 19.2 End of period (Line 18 plus Line 19.1) | 122,397,303 | 98,222,562 | 103,615,595 |
| Note: Supplemental disclosures of cash flow information for non-cash transactions: | | | |
| 20.0001. Bond conversions and refinancing | 434 | | 1,749,327 |

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 | 11,333,498 | 2,578,046 | 23,966,435 |
| 3. Ordinary individual annuities | 4,800 | 5,552 | 19,952 |
| 4. Credit life (group and individual) | | | |
| 5. Group life insurance | (2,163,716) | | 731,301 |
| 6. Group annuities | | | |
| 7. A & H - group | | | |
| 8. A & H - credit (group and individual) | | | |
| 9. A & H - other | | | |
| 10. Aggregate of all other lines of business | | | |
| 11. Subtotal (Lines 1 through 10) | 9,174,582 | 2,583,598 | 24,717,688 |
| 12. Fraternal (Fraternal Benefit Societies Only) | | | |
| 13. Subtotal (Lines 11 through 12) | 9,174,582 | 2,583,598 | 24,717,688 |
| 14. Deposit-type contracts | | | |
| 15. Total (Lines 13 and 14) | 9,174,582 | 2,583,598 | 24,717,688 |
| DETAILS OF WRITE-INS | | | |
| 1001. | | | |
| 1002. | | | |
| 1003. | | | |
| 1098. Summary of remaining write-ins for Line 10 from overflow page | | | |
| 1099. Totals (Lines 1001 through 1003 plus 1098)(Line 10 above) | | | |

NOTES TO FINANCIAL STATEMENTS

TABLE OF CONTENTS

| |
|---|
| 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 | 2021 | 2020 |
|--|--------|-------------|-------------|-----------------------|-----------------------|
| NET INCOME | | | | | |
| (1) State basis (Page 4, Line 35, Columns 1 & 3) | XXX | XXX | XXX | \$ 6,824,945 | \$ 12,385,260 |
| (2) State prescribed practices that increase/(decrease) NAIC | N/A | N/A | N/A | - | - |
| (3) State permitted practices that increase/(decrease) NAIC | N/A | N/A | N/A | - | - |
| (4) NAIC SAP (1-2-3=4) | XXX | XXX | XXX | <u>\$ 6,824,945</u> | <u>\$ 12,385,260</u> |
| SURPLUS | | | | | |
| (5) State basis (Page 3, Line 38, Columns 1 & 2) | XXX | XXX | XXX | \$ 281,377,936 | \$ 274,509,526 |
| (6) State prescribed practices that increase/(decrease) NAIC | N/A | N/A | N/A | - | - |
| (7) State permitted practices that increase/(decrease) NAIC | N/A | N/A | N/A | - | - |
| (8) NAIC SAP (5-6-7=8) | XXX | XXX | XXX | <u>\$ 281,377,936</u> | <u>\$ 274,509,526</u> |

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

c. Accounting policy:

(1) No change

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

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

(3-5) No change

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

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

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

(7-14) No change

d. Going concern:

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

Note 2 – Accounting Changes and Corrections of Errors

- a. For the three months ended March 31, 2021 and 2020, the Company did not record any corrections of prior years' errors.

b. Adoption of new accounting standards

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

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

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

NOTES TO FINANCIAL STATEMENTS

Note 3 – Business Combinations and Goodwill - No change

Note 4 – Discontinued Operations - No change

Note 5 – Investments

- a. Mortgage loans - No change
- b. Debt restructuring - No change
- c. Reverse mortgages - No change
- d. Loan-backed securities:
 - (1) Prepayment assumptions for loan-backed and structured securities are based on various assumptions and inputs obtained from external industry sources along with internal analysis and actual experience.

NOTES TO FINANCIAL STATEMENTS

- (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 | <u>93,988</u> | <u>-</u> | <u>3,976</u> | <u>90,012</u> |
| c. Total first quarter | <u>\$ 93,988</u> | <u>\$ -</u> | <u>\$ 3,976</u> | <u>\$ 90,012</u> |
| OTTI recognized in the second quarter | | | | |
| d. Intent to sell | \$ - | \$ - | \$ - | \$ - |
| e. Inability or lack of intent to retain the investment in the security for a period of time sufficient to recover the amortized cost basis | <u>-</u> | <u>-</u> | <u>-</u> | <u>-</u> |
| f. Total second quarter | <u>\$ -</u> | <u>\$ -</u> | <u>\$ -</u> | <u>\$ -</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 | <u>-</u> | <u>-</u> | <u>-</u> | <u>-</u> |
| i. Total third quarter | <u>\$ -</u> | <u>\$ -</u> | <u>\$ -</u> | <u>\$ -</u> |
| OTTI recognized in the fourth quarter | | | | |
| j. Intent to sell | \$ - | \$ - | \$ - | \$ - |
| k. Inability or lack of intent to retain the investment in the security for a period of time sufficient to recover the amortized cost basis | <u>-</u> | <u>-</u> | <u>-</u> | <u>-</u> |
| l. Total fourth quarter | <u>\$ -</u> | <u>\$ -</u> | <u>\$ -</u> | <u>\$ -</u> |
| m. Annual aggregate total | | <u>\$ -</u> | <u>\$ 3,976</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 | \$ 93,988 | \$ 90,012 | \$ (3,976) | \$ 90,012 | \$ 80,737 | March 31, 2021 |
| Totals | \$ 93,988 | \$ 90,012 | \$ (3,976) | \$ 90,012 | \$ 80,737 | |

- (4) As of March 31, 2021, the gross unrealized losses and fair values for investments in structured and loan-backed securities for which an OTTI has not been recognized in earnings follow:

| | |
|---|---------------|
| a. The aggregate amount of unrealized losses: | |
| 1. Less than 12 months | \$ (523,230) |
| 2. 12 months or longer | \$ (429,328) |
| b. The aggregate related fair value of securities with unrealized losses: | |
| 1. Less than 12 months | \$ 11,567,906 |
| 2. 12 months or longer | \$ 4,984,119 |

- (5) No change

- e. Dollar repurchase agreements and/or securities lending transactions: The Company did not have any dollar repurchase agreements and/or securities lending transactions as of March 31, 2021.
- f. Repurchase agreements transactions accounted for as secured borrowing:
(1) The Company did not have any repurchase agreements as of March 31, 2021.
- g. Reverse repurchase agreements transactions accounted for as secured borrowing: The Company did not have any reverse repurchase agreements transactions accounted for as secured borrowing as of March 31, 2021.
- h. Repurchase agreements transactions accounted for as a sale: The Company did not have any repurchase agreements transactions accounted for as a sale as of March 31, 2021.
- i. Reverse repurchase agreements transactions accounted for as a sale: The Company did not have any reverse repurchase

NOTES TO FINANCIAL STATEMENTS

agreements transactions accounted for as a sale as of March 31, 2021.

- j. Real estate - No change
- k. Low-Income Housing Tax Credit - No change
- l. Restricted Assets - No change
- m. Working capital finance investments: The Company did not invest in working capital finance investments as of March 31, 2021.
- n. Offsetting and netting of assets and liabilities: The Company does not currently hold derivatives, repurchase agreements, reverse repurchase agreements or securities lending assets and liabilities as of March 31, 2021.
- o. 5GI Securities:

| Investment | Number of 5GI Securities | | Aggregate BACV | | Aggregate Fair Value | |
|--------------------------|--------------------------|------------|----------------|------------|----------------------|------------|
| | Current Year | Prior Year | Current Year | Prior Year | Current Year | Prior Year |
| (1) Bonds - AC | 1 | 1 | \$26,572 | \$26,677 | \$26,722 | \$26,610 |
| (2) LB&SS - AC | - | - | - | - | - | - |
| (3) Preferred Stock - AC | - | - | - | - | - | - |
| (4) Preferred Stock - FV | - | - | - | - | - | - |
| (5) Total (1+2+3+4) | 1 | 1 | \$26,572 | \$26,677 | \$26,722 | \$26,610 |

AC - Amortized Cost FV - Fair Value

- p. Short sales - The Company does not engage in short sale transactions.
- q. Prepayment penalty and acceleration fees:

| | Three Months Ended March 31, 2021 | |
|--|-----------------------------------|------------------|
| | General Account | Separate Account |
| 1. Number of CUSIPS | 1 | 3 |
| 2. Aggregate amount of investment income | \$ 2,645 | \$ 80,093 |

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

| Asset Type | Percent Share |
|---------------------------|---------------|
| (1) Cash | -2% |
| (2) Cash equivalents | 45% |
| (3) Short-term investment | 57% |
| (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 three months ended March 31, 2021.

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.

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

NOTES TO FINANCIAL STATEMENTS

d. Claims related to extra contractual obligations - No change

e. Joint and several liabilities – No change

f. All other contingencies:

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

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

Note 15 – Leases - No change

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

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

a. Transfers of receivables reported as sales - No change

b. Transfer and servicing of financial assets:

(1) No change

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

(3) No change

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

(5-7) No change

c. Wash sales:

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

(2) The Company did not sell any securities with the NAIC Designation 3 or below, or unrated, through the three months ended March 31, 2021 that were reacquired within 30 days of the sale date.

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

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

Note 20 – Fair Value Measurements

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

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

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.

NOTES TO FINANCIAL STATEMENTS

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:

| | March 31, 2021 | | | Net Asset Value (NAV) | Total |
|---|-------------------------|-------------------------|-------------------|--------------------------|-------------------------|
| | Level 1 | Level 2 | Level 3 | | |
| Financial assets: | | | | | |
| Bonds: | | | | | |
| Industrial and miscellaneous | \$ - | \$ 711,555 | \$ - | \$ - | \$ 711,555 |
| Separate account assets ⁽¹⁾ | 1,242,093,085 | 2,414,537,434 | 199,948 | - | 3,656,830,467 |
| Total financial assets carried at fair value | <u>\$ 1,242,093,085</u> | <u>\$ 2,415,248,989</u> | <u>\$ 199,948</u> | <u>\$ -</u> | <u>\$ 3,657,542,022</u> |

⁽¹⁾\$1,181,458,983 of book value separate account assets are not carried at fair value and, therefore, are not included in this table.

For the period ended March 31, 2021, there were no significant transfers between Level 1 and Level 2 and the Company does not have any financial instruments that are carried at NAV as a practical expedient.

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

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

(2) The Company does not have any level 3 financial instruments that are carried at fair value.

(3) The Company reviews the fair value hierarchy classifications at each reporting period. Overall, reclassifications between levels occur when there are changes in the observability of inputs and market activity used in the valuation of a financial asset or liability. Such reclassifications are reported as transfers between levels at the beginning fair value for the reporting period in which the changes occur. Given the types of assets classified as Level 1 (primarily equity securities and mutual fund investments), transfers between Level 1 and Level 2 measurement categories are expected to be infrequent. Transfers into and out of Level 3 are summarized in the schedule of changes in Level 3 assets and liabilities.

(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

NOTES TO FINANCIAL STATEMENTS

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:

| | | March 31, 2021 | | | | | Net | Not | |
|---|----|-------------------|---------------|---------------|---------------|------------|-------|-------------|--------|
| | | Aggregate | Admitted | Level 1 | Level 2 | Level 3 | Asset | Practicable | |
| | | Fair Value | Assets | | | | Value | (Carrying | |
| | | | | | | | | (NAV) | Value) |
| Financial assets: | | | | | | | | | |
| Bonds: | | | | | | | | | |
| U. S. government and agencies | \$ | 4,507,271 | \$ 4,503,180 | \$ - | \$ 4,507,271 | \$ - | \$ - | \$ - | |
| Special revenue | | 39,076 | 34,006 | - | 39,076 | - | - | - | |
| Industrial and miscellaneous | | 246,087,860 | 229,792,171 | - | 245,715,645 | 372,215 | - | - | |
| Mortgage loans - residential | | 2,045,927 | 2,022,129 | - | - | 2,045,927 | - | - | |
| Cash, cash equivalents and short-term investments | | 122,397,303 | 122,397,303 | (2,063,196) | 124,460,499 | - | - | - | |
| Separate account assets | | 4,874,625,475 | 4,838,289,450 | 1,243,125,569 | 3,621,402,379 | 10,097,527 | - | - | |
| Financial liabilities: | | | | | | | | | |
| Individual annuity contracts | | 3,309,709 | 3,189,816 | - | - | 3,309,709 | - | - | |
| Supplementary contracts | | 12,163,740 | 12,043,307 | - | - | 12,163,740 | - | - | |
| | | December 31, 2020 | | | | | Net | Not | |
| | | Aggregate | Admitted | Level 1 | Level 2 | Level 3 | Asset | Practicable | |
| | | Fair Value | Assets | | | | Value | (Carrying | |
| | | | | | | | | (NAV) | Value) |
| Financial assets: | | | | | | | | | |
| Bonds: | | | | | | | | | |
| U. S. government and agencies | \$ | 4,521,198 | \$ 4,504,991 | \$ - | \$ 4,521,198 | \$ - | \$ - | \$ - | |
| Special revenue | | 40,848 | 35,264 | - | 40,848 | - | - | - | |
| Industrial and miscellaneous | | 262,438,285 | 238,906,475 | - | 261,951,736 | 486,549 | - | - | |
| Mortgage loans - residential | | 2,149,234 | 2,090,393 | - | - | 2,149,234 | - | - | |
| Cash, cash equivalents and short-term investments | | 103,615,595 | 103,615,595 | (1,932,163) | 105,547,758 | - | - | - | |
| Separate account assets | | 4,929,390,678 | 4,858,831,848 | 1,195,557,522 | 3,723,465,405 | 10,367,751 | - | - | |
| Financial liabilities: | | | | | | | | | |
| Individual annuity contracts | | 3,181,417 | 3,059,214 | - | - | 3,181,417 | - | - | |
| Supplementary contracts | | 13,002,296 | 12,873,560 | - | - | 13,002,296 | - | - | |

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

Note 21 – Other Items

a. Unusual or infrequent items - No change

b. Troubled debt restructuring - No change

c. Other disclosures and unusual items:

Business risks

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

Insurance and underwriting risks

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

NOTES TO FINANCIAL STATEMENTS

Investment and interest rate risks

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

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

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

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

Credit and other market risks

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

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

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

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

Political Uncertainties

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

d. Business interruption insurance recoveries - No change

e. State transferrable tax credits - No change

f. Subprime mortgage related risk exposure:

(1) No change

(2) No change

(3) Direct exposure through other investments:

Residential mortgage-backed securities risk exposure:

| | March 31, 2021 | | | Three Months Ended |
|---|-------------------|-------------------|-------------------|------------------------|
| | Actual Cost | Carrying Value | Fair Value | March 31, 2021 OTTI |
| Alt-A: | | | | |
| a. Residential mortgage-backed securities | \$ 420,056 | \$ 507,262 | \$ 576,933 | \$ - |
| b. Commercial mortgage-backed securities | - | - | - | - |
| c. Collateralized debt obligations | - | - | - | - |
| d. Structured securities | - | - | - | - |
| e. Equity investments in SCA | - | - | - | - |
| f. Other assets | - | - | - | - |
| g. Total | <u>\$ 420,056</u> | <u>\$ 507,262</u> | <u>\$ 576,933</u> | <u>\$ -</u> |

NOTES TO FINANCIAL STATEMENTS

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

(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 May 14, 2021, the date the financial statements were available to be issued to state regulators and subsequently on the Company's website. No events have occurred subsequent to the date of the financial statements.

Note 23 – Reinsurance - No change

Note 24 – Retrospectively Rated Contracts and Contracts Subject to Redetermination

a – d. No change

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

Note 25 – Change in Incurred Losses and Loss Adjustment Expenses

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

Note 26 – Intercompany Pooling Arrangements - No change

Note 27 – Structured Settlements - No change

Note 28 – Health Care Receivables - No change

Note 29 – Participating Policies - No change

Note 30 – Premium Deficiency Reserves - No change

Note 31 – Reserves for Life Contracts and Annuity Contracts - No change

Note 32 – Analysis of Annuity Actuarial Reserves and Deposit Type Liabilities by Withdrawal Characteristics - No change

Note 33 – Analysis of Life Actuarial Reserves by Withdrawal Characteristics - No change

Note 34 – Premium and Annuity Considerations Deferred and Uncollected - No change

Note 35 – Separate Accounts - No change

Note 36 – Loss/Claim Adjustment Expenses - No change

GENERAL INTERROGATORIES

PART 1 - COMMON INTERROGATORIES

GENERAL

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

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

5. If the reporting entity is subject to a management agreement, including third-party administrator(s), managing general agent(s), attorney-in-fact, or similar agreement, have there been any significant changes regarding the terms of the agreement or principals involved? Yes [] No [X] N/A []
If yes, attach an explanation.
- 6.1 State as of what date the latest financial examination of the reporting entity was made or is being made. 12/31/2019
- 6.2 State the as of date that the latest financial examination report became available from either the state of domicile or the reporting entity. This date should be the date of the examined balance sheet and not the date the report was completed or released. 12/31/2014
- 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). 05/31/2016
- 6.4 By what department or departments?
- 6.5 Have all financial statement adjustments within the latest financial examination report been accounted for in a subsequent financial statement filed with Departments? Yes [] No [] N/A [X]
- 6.6 Have all of the recommendations within the latest financial examination report been complied with? Yes [X] No [] N/A []
- 7.1 Has this reporting entity had any Certificates of Authority, licenses or registrations (including corporate registration, if applicable) suspended or revoked by any governmental entity during the reporting period? Yes [] No [X]
- 7.2 If yes, give full information:
- 8.1 Is the company a subsidiary of a bank holding company regulated by the Federal Reserve Board? Yes [] No [X]
- 8.2 If response to 8.1 is yes, please identify the name of the bank holding company.
- 8.3 Is the company affiliated with one or more banks, thrifts or securities firms? Yes [X] No []
- 8.4 If response to 8.3 is yes, please provide below the names and location (city and state of the main office) of any affiliates regulated by a federal regulatory services agency [i.e. the Federal Reserve Board (FRB), the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC) and the Securities Exchange Commission (SEC)] and identify the affiliate's primary federal regulator.

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

GENERAL INTERROGATORIES

- 9.1 Are the senior officers (principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions) of the reporting entity subject to a code of ethics, which includes the following standards? Yes [X] No []
 (a) Honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships;
 (b) Full, fair, accurate, timely and understandable disclosure in the periodic reports required to be filed by the reporting entity;
 (c) Compliance with applicable governmental laws, rules and regulations;
 (d) The prompt internal reporting of violations to an appropriate person or persons identified in the code; and
 (e) Accountability for adherence to the code.
- 9.11 If the response to 9.1 is No, please explain:
- 9.2 Has the code of ethics for senior managers been amended? Yes [] No [X]
- 9.21 If the response to 9.2 is Yes, provide information related to amendment(s).
- 9.3 Have any provisions of the code of ethics been waived for any of the specified officers? Yes [] No [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 [] No [X]
- 10.2 If yes, indicate any amounts receivable from parent included in the Page 2 amount: \$0

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 [] No [X]
- 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 | \$ | \$ |
| 14.22 Preferred Stock | \$ | \$ |
| 14.23 Common Stock | \$ | \$ |
| 14.24 Short-Term Investments | \$ | \$ |
| 14.25 Mortgage Loans on Real Estate | \$ | \$ |
| 14.26 All Other | \$ | \$ |
| 14.27 Total Investment in Parent, Subsidiaries and Affiliates (Subtotal Lines 14.21 to 14.26) | \$ | \$ |
| 14.28 Total Investment in Parent included in Lines 14.21 to 14.26 above | \$ | \$ |
- 15.1 Has the reporting entity entered into any hedging transactions reported on Schedule DB? Yes [] No [X]
- 15.2 If yes, has a comprehensive description of the hedging program been made available to the domiciliary state? Yes [] No [] N/A [X]
 If no, attach a description with this statement.
16. For the reporting entity's security lending program, state the amount of the following as of the current statement date:
- 16.1 Total fair value of reinvested collateral assets reported on Schedule DL, Parts 1 and 2. \$
- 16.2 Total book adjusted/carrying value of reinvested collateral assets reported on Schedule DL, Parts 1 and 2. \$
- 16.3 Total payable for securities lending reported on the liability page. \$

STATEMENT AS OF MARCH 31, 2021 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 |
|---------------------------------|------------------|
| Barings LLC | A..... |

17.5097 For those firms/individuals listed in the table for Question 17.5, do any firms/individuals unaffiliated with the reporting entity (i.e. designated with a "U") manage more than 10% of the reporting entity's invested assets?..... Yes [] No [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 Central Registration Depository Number | 2 Name of Firm or Individual | 3 Legal Entity Identifier (LEI) | 4 Registered With | 5 Investment Management Agreement (IMA) Filed |
|---|---------------------------------|------------------------------------|----------------------|--|
| 106006 | Barings LLC | 549300X8U1KFZ24TU94 | SEC | DS..... |

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

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 \$ 2,022,129
- 1.13 Commercial Mortgages \$
- 1.14 Total Mortgages in Good Standing \$ 2,022,129
- 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) \$ 2,022,129
- 1.6 Long-Term Mortgages Foreclosed, Properties Transferred to Real Estate in Current Quarter
- 1.61 Farm Mortgages \$
- 1.62 Residential Mortgages \$
- 1.63 Commercial Mortgages \$
- 1.64 Total Mortgages Foreclosed and Transferred to Real Estate \$
2. Operating Percentages:
- 2.1 A&H loss percent %
- 2.2 A&H cost containment percent %
- 2.3 A&H expense percent excluding cost containment expenses %
- 3.1 Do you act as a custodian for health savings accounts? Yes [] No [X]
- 3.2 If yes, please provide the amount of custodial funds held as of the reporting date \$
- 3.3 Do you act as an administrator for health savings accounts? Yes [] No [X]
- 3.4 If yes, please provide the balance of the funds administered as of the reporting date \$
4. Is the reporting entity licensed or chartered, registered, qualified, eligible or writing business in at least two states? Yes [X] No []
- 4.1 If no, does the reporting entity assume reinsurance business that covers risks residing in at least one state other than the state of domicile of the reporting entity? Yes [] No []

Fraternal Benefit Societies Only:

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

| Date | Outstanding Lien Amount |
|-------|-------------------------|
| | |

SCHEDULE S - CEDED REINSURANCE

Showing All New Reinsurance Treaties - Current Year to Date

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

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company
SCHEDULE T - PREMIUMS AND ANNUITY CONSIDERATIONS

Current Year To Date - Allocated by States and Territories

| States, Etc. | 1 | Life Contracts | | Direct Business Only | | | |
|--|-------------------|-------------------------|------------------------|---|----------------------|---------------------------|------------------------|
| | | 2 | 3 | 4 | 5 | 6 | 7 |
| | Active Status (a) | Life Insurance Premiums | Annuity Considerations | Accident and Health Insurance Premiums, Including Policy, Membership and Other Fees | Other Considerations | Total Columns 2 Through 5 | Deposit-Type Contracts |
| 1. Alabama | AL | L | 38,258 | | | 38,258 | |
| 2. Alaska | AK | L | 1,800 | | | 1,800 | |
| 3. Arizona | AZ | L | 168,147 | | | 168,147 | |
| 4. Arkansas | AR | L | 27,595 | | | 27,595 | |
| 5. California | CA | L | 834,674 | | | 834,674 | |
| 6. Colorado | CO | L | 128,554 | | | 128,554 | |
| 7. Connecticut | CT | L | 188,303 | | | 188,303 | |
| 8. Delaware | DE | L | 23,561 | | | 23,561 | |
| 9. District of Columbia | DC | L | 249,722 | | | 249,722 | |
| 10. Florida | FL | L | 428,834 | | | 428,834 | |
| 11. Georgia | GA | L | 125,507 | | | 125,507 | |
| 12. Hawaii | HI | L | 34,950 | | | 34,950 | |
| 13. Idaho | ID | L | 16,424 | | | 16,424 | |
| 14. Illinois | IL | L | 255,634 | | | 255,634 | |
| 15. Indiana | IN | L | 109,998 | | | 109,998 | |
| 16. Iowa | IA | L | 100,358 | 450 | | 100,808 | |
| 17. Kansas | KS | L | 58,808 | | | 58,808 | |
| 18. Kentucky | KY | L | 50,017 | | | 50,017 | |
| 19. Louisiana | LA | L | 86,853 | | | 86,853 | |
| 20. Maine | ME | L | 38,015 | | | 38,015 | |
| 21. Maryland | MD | L | 194,454 | | | 194,454 | |
| 22. Massachusetts | MA | L | 262,495 | | | 262,495 | |
| 23. Michigan | MI | L | 622,587 | 3,600 | | 626,187 | |
| 24. Minnesota | MN | L | 85,234 | | | 85,234 | |
| 25. Mississippi | MS | L | 50,257 | | | 50,257 | |
| 26. Missouri | MO | L | 107,906 | | | 107,906 | |
| 27. Montana | MT | L | 36,262 | | | 36,262 | |
| 28. Nebraska | NE | L | 69,587 | 450 | | 70,037 | |
| 29. Nevada | NV | L | 63,691 | | | 63,691 | |
| 30. New Hampshire | NH | L | 26,400 | | | 26,400 | |
| 31. New Jersey | NJ | L | 300,302 | | | 300,302 | |
| 32. New Mexico | NM | L | 16,466 | | | 16,466 | |
| 33. New York | NY | N | 36,237 | | | 36,237 | |
| 34. North Carolina | NC | L | 381,363 | | | 381,363 | |
| 35. North Dakota | ND | L | 1,121 | | | 1,121 | |
| 36. Ohio | OH | L | 368,044 | | | 368,044 | |
| 37. Oklahoma | OK | L | 176,488 | | | 176,488 | |
| 38. Oregon | OR | L | 65,294 | | | 65,294 | |
| 39. Pennsylvania | PA | L | 389,094 | | | 389,094 | |
| 40. Rhode Island | RI | L | 104,960 | | | 104,960 | |
| 41. South Carolina | SC | L | 129,848 | | | 129,848 | |
| 42. South Dakota | SD | L | 8,627 | | | 8,627 | |
| 43. Tennessee | TN | L | 131,882 | | | 131,882 | |
| 44. Texas | TX | L | 596,933 | | | 596,933 | |
| 45. Utah | UT | L | 75,648 | | | 75,648 | |
| 46. Vermont | VT | L | 20,217 | 300 | | 20,517 | |
| 47. Virginia | VA | L | 307,084 | | | 307,084 | |
| 48. Washington | WA | L | 135,980 | | | 135,980 | |
| 49. West Virginia | WV | L | 35,625 | | | 35,625 | |
| 50. Wisconsin | WI | L | 62,472 | | | 62,472 | |
| 51. Wyoming | WY | L | 5,521 | | | 5,521 | |
| 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 | 1,050 | | | 1,050 | |
| 58. Aggregate Other Aliens | OT | XXX | 17,784 | | | 17,784 | |
| 59. Subtotal | XXX | 7,852,925 | 4,800 | | | 7,857,725 | |
| 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 | 87,456 | | | | 87,456 | |
| 94. Aggregate or other amounts not allocable by State | XXX | | | | | | |
| 95. Totals (Direct Business) | XXX | 7,940,381 | 4,800 | | | 7,945,181 | |
| 96. Plus Reinsurance Assumed | XXX | | | | | | |
| 97. Totals (All Business) | XXX | 7,940,381 | 4,800 | | | 7,945,181 | |
| 98. Less Reinsurance Ceded | XXX | 7,583,490 | | | | 7,583,490 | |
| 99. Totals (All Business) less Reinsurance Ceded | XXX | 356,891 | 4,800 | | | 361,691 | |
| DETAILS OF WRITE-INS | | | | | | | |
| 58001. ZZZ Other Alien | XXX | 17,784 | | | | 17,784 | |
| 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 | 17,784 | | | | 17,784 | |
| 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 R - Registered - Non-domiciled RRGs.....
E - Eligible - Reporting entities eligible or approved to write surplus lines in the state..... Q - Qualified - Qualified or accredited reinsurer.....
N - None of the above - Not allowed to write business in the state.....7

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

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 |
| Barings Ascend LLC | None | | Delaware |
| Berkshire Way LLC | 04-1590850 | | Delaware |
| MML Special Situations Investor LLC | None | | Delaware |
| Timberland Forest Holding LLC | 47-5322979 | | Delaware |
| Lyme Adirondack Forest Company, LLC | None | | Delaware |
| Lyme Adirondack Timberlands I, LLC | None | | Delaware |
| Lyme Adirondack Timberlands II, LLC | None | | Delaware |
| MSP-SC, LLC | 04-1590850 | | Delaware |
| Insurance Road LLC | 04-1590850 | | Delaware |
| MassMutual Trad Private Equity LLC | 04-1590850 | | Delaware |
| MassMutual Private Equity Funds LLC | 04-1590850 | | Delaware |
| MassMutual Intellectual Property LLC | 04-1590850 | | Delaware |
| Trad Investments I LLC | None | | Delaware |
| EM Opportunities LLC | None | | Delaware |
| MassMutual MCAM Insurance Company, Inc. | None | | Vermont |
| Jefferies Finance LLC | 27-0105644 | | Delaware |
| APEX Credit Partners LLC | None | | Delaware |
| Jefferies Credit Partners LLC | None | | Delaware |
| Jefferies Credit Management LLC | None | | Delaware |
| Jefferies Private Credit GP LLC | None | | Maryland |
| Jefferies Private Credit Fund LP | None | | Delaware |
| Jefferies Private Credit BDC Inc. | None | | Delaware |
| JFIN GP Adviser LLC | None | | Delaware |
| JFIN Fund III LLC | None | | Delaware |
| JFIN Fund VI LLC | None | | Delaware |
| JFIN Asset Management LLC | None | | Delaware |

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

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

12.2

| | <u>Federal Tax ID</u> | <u>NAIC Co Code</u> | <u>State of Domicile</u> |
|---|-----------------------|---------------------|--------------------------|
| 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 |
| JFIN Revolver Holdings LLC | None | | Delaware |
| JFIN Revolver Holdings II LLC | None | | Delaware |
| JFIN Co-Issuer Corporation | None | | Delaware |
| JFIN Europe GP, S.a.r.l. | None | | Luxembourg |
| Jefferies Finance Europe, S.L.P. | None | | Luxembourg |
| Jefferies Finance Europe, SCSp | None | | Luxembourg |
| Jefferies Finance Business Credit LLC | None | | Delaware |
| JFIN Business Credit Fund I LLC | None | | Delaware |
| JFIN High Yield Investments LLC | None | | Delaware |
| JFIN LC Fund LLC | None | | Delaware |
| JFIN 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 Revolver CLO 2017 Ltd. | None | | Cayman Islands |
| JFIN Revolver CLO 2017-II Ltd. | None | | Cayman Islands |
| JFIN Revolver CLO 2017-III Ltd. | None | | Cayman Islands |
| JFIN Revolver CLO 2018 Ltd. | None | | Cayman Islands |
| JFIN Revolver CLO 2019 Ltd. | None | | Cayman Islands |
| JFIN Revolver CLO 2019-II Ltd. | None | | Cayman Islands |
| JFIN Revolver CLO 2020 Ltd. | None | | Cayman Islands |
| JFIN Revolver CLO 2021-II Ltd. | None | | Cayman Islands |
| JFIN Revolver Fund, L.P. | None | | Delaware |
| JFIN Revolver Funding 2021 Ltd. | None | | Delaware |
| Apex Credit CLO 2015-II Ltd.* | None | | Cayman Islands |
| Apex Credit CLO 2016 Ltd. | None | | Cayman Islands |
| Apex Credit CLO 2017 Ltd. | None | | Cayman Islands |
| Apex Credit CLO 2017-II Ltd. | None | | Cayman Islands |
| Glidepath Holdings Inc. | None | | Delaware |
| MassMutual Mortgage Lending LLC | None | | Delaware |
| MM Copper Hill Road LLC | 04-1590850 | | Delaware |
| 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 |

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

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

| | <u>Federal Tax ID</u> | <u>NAIC Co Code</u> | <u>State of Domicile</u> |
|--|-----------------------|---------------------|--------------------------|
| 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 |
| Rozier LLC | None | | Delaware |
| MML Management Corporation | 04-2443240 | | Massachusetts |
| MassMutual International Holding MSC, Inc. | 04-3548444 | | Massachusetts |
| MassMutual Holding MSC, Inc. | 04-3341767 | | Massachusetts |
| MML CM LLC | None | | Delaware |
| Blueprint Income LLC | None | | New York |
| Flourish Financial LLC | None | | Delaware |
| MML Distributors LLC* | 04-3356880 | | Massachusetts |
| MML Investment Advisers, LLC | None | | Delaware |
| MML Strategic Distributors, LLC | 46-3238013 | | Delaware |
| The MassMutual Trust Company, FSB | 06-1563535 | | Connecticut |
| MML Private Placement Investment Company I, LLC | 04-1590850 | | Delaware |
| MML Private Equity Fund Investor LLC | 04-1590850 | | Delaware |
| MM Private Equity Intercontinental LLC | 04-1590850 | | Delaware |
| Pioneers Gate LLC | 45-2738137 | | Delaware |
| MassMutual Holding LLC | 04-2854319 | | Delaware |
| Fern Street LLC | 37-1732913 | | Delaware |
| Sleeper Street LLC | None | | Delaware |
| Haven Life Insurance Agency, LLC | 46-2252944 | | Delaware |
| MassMutual Assignment Company | 06-1597528 | | North Carolina |
| MassMutual Capital Partners LLC | 04-1590850 | | Delaware |
| MassMutual Ventures Holding LLC | None | | Delaware |
| Athens Fund Management LLC | None | | Delaware |
| Crane Venture Partners LLP | None | | United Kingdom |
| MassMutual Ventures Management LLC | None | | Delaware |
| MassMutual Ventures SEA Management Private Limited | None | | Singapore |
| MassMutual Ventures Southeast Asia I LLC | None | | Delaware |
| MassMutual Ventures Southeast Asia II LLC | None | | Delaware |
| MassMutual Ventures UK LLC | None | | Delaware |
| MassMutual Ventures US I LLC | 47-1296410 | | Delaware |
| MassMutual Ventures US II LLC | None | | Delaware |
| MassMutual Ventures US III LLC | None | | Delaware |
| Open Alternatives LLC | None | | Delaware |
| MM Catalyst Fund LLC | None | | Delaware |
| MM Rothesay Holdco US LLC | 04-1590850 | | Delaware |

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

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

| | <u>Federal Tax ID</u> | <u>NAIC Co Code</u> | <u>State of Domicile</u> |
|--|-----------------------|---------------------|---|
| Rothesay Limited | None | | United Kingdom |
| Rothesay Life Plc | None | | United Kingdom |
| Rothesay Assurance Limited | None | | United Kingdom |
| Rothesay MA No.1 Limited | None | | United Kingdom |
| Rothesay MA No.2 Limited | None | | United Kingdom |
| Rothesay MA No.3 Limited | None | | United Kingdom |
| Rothesay MA No.4 Limited | None | | United Kingdom |
| LT Mortgage Finance Limited | None | | United Kingdom |
| Rothesay Property Partnership 1 LLP | None | | United Kingdom |
| Rothesay Foundation | None | | United Kingdom |
| Rothesay Pensions Management Limited | None | | United Kingdom |
| Rothesay Asset Management UK Limited | None | | United Kingdom |
| Rothesay Asset Management 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 Holding Company Pty Ltd | None | | Australia |
| Barings Australia Pty Ltd | 98-0457456 | | Australia |
| Barings Finance LLC | 80-0875475 | | Delaware |
| BCF Europe Funding Limited | None | | Ireland |
| BCF Senior Funding I LLC | None | | Delaware |
| BCF Senior Funding I Designated Activity Company | None | | Ireland |
| Barings Securities LLC | 04-3238351 | | Delaware |
| Barings Guernsey Limited | 98-0437588 | | Guernsey |
| Barings Europe Limited | None | | United Kingdom |
| Barings Asset Management Spain SL | None | | Spain |
| Barings Italy S.r.l. | None | | Italy |
| Barings Sweden AB | None | | Sweden |
| Barings Finland Oy | None | | Finland |

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

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

| | <u>Federal Tax ID</u> | <u>NAIC Co Code</u> | <u>State of Domicile</u> |
|---|-----------------------|---------------------|--------------------------|
| Barings Netherlands B.V. | None | | Netherlands |
| Barings Real Estate UK Holdings Limited | None | | Delaware |
| BREAE AIFM LLP | None | | United Kingdom |
| Barings Real Estate Advisers (Continental Europe) Limited | 98-0654401 | | United Kingdom |
| Barings Real Estate Advisers Europe LLP | 98-0654388 | | United Kingdom |
| Barings Real Estate Advisers Europe Finance LLP | 98-0654412 | | United Kingdom |
| Barings Real Estate GmbH | 98-1194368 | | Germany |
| Baring Asset Management Limited | 98-0241935 | | United Kingdom |
| Barings European Direct Lending 1 GP LLP | None | | United Kingdom |
| Barings Global Advisors Limited | 98-1012393 | | United Kingdom |
| Baring International Investment Limited | 98-0457328 | | United Kingdom |
| Baring International Investment Management Holdings | 98-0457587 | | United Kingdom |
| Baring Asset Management UK Holdings Limited | 98-0457576 | | United Kingdom |
| Baring Asset Management GmbH | 98-0465031 | | Germany |
| Baring International Fund Managers (Ireland) Limited | 98-0524272 | | Ireland |
| Baring Asset Management Switzerland Sàrl | None | | Switzerland |
| Baring France SAS | 98-0497550 | | France |
| Baring Fund Managers Limited | 98-0457586 | | United Kingdom |
| BCGSS 2 GP LLP | None | | United Kingdom |
| Baring Pension Trustees Limited | 98-0457574 | | 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 S.à.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 |
| Almack Holding Partnership GP Limited | None | | United Kingdom |
| Almack Mezzanine Fund Limited | None | | United Kingdom |
| Almack Mezzanine Fund II Limited | None | | United Kingdom |
| Barings (U.K.) Limited | 98-0432153 | | United Kingdom |
| Barings Multifamily Capital Holdings LLC | None | | Delaware |
| Barings Multifamily Capital LLC | None | | Michigan |
| Barings Multifamily Capital Corporation | None | | Delaware |
| Barings Real Estate Advisers Inc. | 04-3238351 | | California |
| Chassis Acquisition Holding LLC | 81-2244465 | | Delaware |
| CRA Aircraft Holding LLC* | 81-4258759 | | Delaware |
| Aland Royalty Holdings LP | None | | Delaware |
| ASM SIP, LP | None | | Cayman Islands |

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

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

| | <u>Federal Tax ID</u> | <u>NAIC Co Code</u> | <u>State of Domicile</u> |
|---|-----------------------|---------------------|--------------------------|
| Intermodal Holding II LLC | 46-2344300 | | Delaware |
| Milestone Acquisition Holding, LLC. | 47-3055009 | | Delaware |
| Novation Companies, Inc. | None | | Maryland |
| Red Lake Ventures, LLC | 46-5460309 | | Delaware |
| Remington L & W Holdings LLC* | 81-4065378 | | Connecticut |
| Tamiami Citrus, LLC | None | | Delaware |
| Teaktree Acquisition, LLC | None | | Delaware |
| Techquity, LP | None | | Delaware |
| Validus Holding Company LLC | 46-0687392 | | Delaware |
| Validus Pharmaceuticals LLC | None | | Delaware |
| VGS Acquisition Holding, LLC | None | | Delaware |
| Aland Royalty GP, LLC | None | | Delaware |
| Alaska Future Fund GP, LLC | None | | Delaware |
| BAI Funds SLP, LLC | None | | Delaware |
| BAI GP, LLC | None | | Delaware |
| Barings Alternative Investments SLP, LLC | None | | Delaware |
| Baring Asset-Based Income Fund (US) GP, LLC | None | | Delaware |
| Barings Investment Series LLC | None | | Delaware |
| Barings Capital Investment LLC | None | | Maryland |
| Barings Emerging Generation Fund GP, LLC | None | | Delaware |
| Barings Global Investment Funds (U.S.) Management LLC | 04-1590850 | | Delaware |
| Barings ABIF SLP, LLC | None | | Delaware |
| Barings CLO Investment Partners GP, LLC | None | | Delaware |
| Barings Core Property Fund GP LLC | None | | Delaware |
| Barings Direct Lending GP Ltd. | None | | Cayman Islands |
| Barings Emerging Generation Fund LP | 84-3784245 | | Delaware |
| Barings Global Energy Infrastructure Advisors, LLC | None | | Delaware |
| Barings Global Real Assets Fund GP, LLC | None | | Delaware |
| Barings GPSF | None | | Delaware |
| Barings North American Private Loan Fund Management, LLC | None | | Delaware |
| Barings North American Private Loan Fund Management II, LLC | None | | Delaware |
| Barings/LAZ Parking Fund GP LLC | None | | Delaware |
| Barings Small Business Fund LLC | 84-5063008 | | Delaware |
| Benton Street Advisors, Inc. | 98-0536233 | | Cayman Islands |
| BRECS VII GP LLC | None | | Delaware |
| CCM Fund I REIT Manager LLC | None | | Delaware |
| CEMF I GP LLC | None | | Delaware |
| CHY Venture GP LLC | None | | Delaware |
| CREF X GP LLC | None | | Delaware |
| Great Lakes III GP, LLC | 04-1590850 | | Delaware |
| Lake Jackson LLC | None | | Delaware |

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

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

| | <u>Federal Tax ID</u> | <u>NAIC Co Code</u> | <u>State of Domicile</u> |
|--|-----------------------|---------------------|--------------------------|
| 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 I LP* | None | | United Kingdom |
| Almack Mezzanine Fund II Unleveraged LP | None | | United Kingdom |
| Barings Affordable Housing Mortgage Fund I LLC | 82-3468147 | | Delaware |
| Barings Affordable Housing Mortgage Fund II LLC | 61-1902329 | | Delaware |
| Barings Affordable Housing Mortgage Fund III LLC | 85-3036663 | | Delaware |
| Barings Asset-Based Income Fund (US) LP | 36-4868350 | | Delaware |
| Barings Emerging Markets Corporate Bond Fund | None | | Ireland |
| Barings European Real Estate Debt Income Fund | None | | Luxembourg |
| Babson Capital Global Special Situation Credit Fund 2* | 98-1206017 | | Delaware |
| Babson Capital Loan Strategies Fund, L.P.* | 37-1506417 | | Delaware |
| Barings US High Yield Bond Fund* | None | | Ireland |
| Babson CLO Ltd. 2012-II | None | | Cayman Islands |
| Babson CLO Ltd. 2013-I | None | | Cayman Islands |
| Babson CLO Ltd. 2014-I | None | | Cayman Islands |
| Babson CLO Ltd. 2015-I | None | | Cayman Islands |
| Babson CLO Ltd. 2015-II | None | | Cayman Islands |
| Babson CLO Ltd. 2016-I | None | | Cayman Islands |
| Babson CLO Ltd. 2016-II | None | | Cayman Islands |
| Barings CLO Ltd. 2017-I | None | | Cayman Islands |

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

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

| | <u>Federal Tax ID</u> | <u>NAIC Co Code</u> | <u>State of Domicile</u> |
|--|-----------------------|---------------------|--------------------------|
| Barings CLO 2018-III | None | | Cayman Islands |
| Barings CLO 2018-IV | None | | Cayman Islands |
| Barings CLO 2019-II | 98-1473665 | | Cayman Islands |
| Barings CLO 2019-III | None | | Cayman Islands |
| Barings CLO 2019-IV | None | | Cayman Islands |
| Barings CLO 2020-I | None | | Cayman Islands |
| Barings CLO 2020-II | None | | Cayman Islands |
| Barings CLO 2020-III | None | | Cayman Islands |
| Barings CLO 2020-IV | None | | Cayman Islands |
| Babson Euro CLO 2014-I BV | None | | Netherlands |
| Babson Euro CLO 2014-II BV | None | | Netherlands |
| Babson Euro CLO 2015-I BV | None | | Netherlands |
| Babson Euro CLO 2016-I BV | None | | Netherlands |
| Barings Euro CLO 2019-I | 3603726OH | | Ireland |
| Barings Euro CLO 2019-II | None | | Ireland |
| Barings Euro CLO 2020-I DAC | None | | Ireland |
| Barings Global Em. Markets Equity Fund | 82-5330194 | | North Carolina |
| Barings Global Energy Infrastructure Fund I LP | 98-1332384 | | Cayman Islands |
| Barings Global Inv. Grade Strat Fund | None | | Ireland |
| Barings Global Private Loan Fund | None | | Luxembourg |
| Barings Global Real Assets Fund LP | 82-3867745 | | Delaware |
| Barings Global Special Situations Credit Fund 3 | None | | Ireland |
| Barings Global Special Situations Credit 4 Delaware* | 85-1465973 | | Delaware |
| Barings Global Special Situations Credit 4 LUX* | 98-1570693 | | Luxembourg |
| Barings MiddleMarket CLO 2017-I Ltd & LLC | None | | Cayman Islands |
| Barings MiddleMarket CLO 2018-I | None | | Cayman Islands |
| Barings MiddleMarket CLO 2019-I | None | | Cayman Islands |
| Barings North American Private Loan Fund LP | 38-4010344 | | Delaware |
| Barings RE Credit Strategies VII LP | 98-1332384 | | Delaware |
| Barings CLO Investment Partners LP | 81-0841854 | | Delaware |
| Barings Real Estate European Value Add I SCSp* | None | | United Kingdom |
| Braemar Energy Ventures I, L.P. * | None | | Delaware |
| Barings European Core Property Fund SCSp | None | | Luxembourg |
| Benchmark 2018-B2 Mortgage Trust | 38-4059932 | | New York |
| Benchmark 2018-B4 | None | | New York |
| Benchmark 2018-B8 | 38-4096530 | | New York |
| Braselton Point LLC | 04-1590850 | | Delaware |
| Barings Core Property Fund LP | 20-5578089 | | Delaware |
| Comerstone Real Estate Fund VIII LP | 27-0547156 | | Delaware |
| Comerstone Real Estate Fund X LP | 46-5432619 | | Delaware |
| Comerstone Permanent Mortgage Fund III LLC | 35-2531693 | | 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

| | <u>Federal Tax ID</u> | <u>NAIC Co Code</u> | <u>State of Domicile</u> |
|---|------------------------|---------------------|---------------------------|
| Cornerstone Permanent Mortgage Fund IV LLC | 61-1793735 | | Massachusetts |
| GASL Holdings, LLC | 82-2932156 | | Delaware |
| Gateway Mezzanine Partners II LP* | 90-0991195 | | Delaware |
| Great Lakes III, L.P. | 37-1708623 | | Delaware |
| JPMCC Commercial Mortgage Securities Trust 2017-JP7 | 38-4041011; 38-4041012 | | New York |
| JPMDB Commercial Mortgage Securities Trust 2017-C5 | 38-4032059 | | New York |
| KKR-MM Vector LP | 82-1512591 | | Delaware |
| Marco Hotel LLC | 46-4255307 | | Delaware |
| Miami Douglas One GP LLC* | 04-1590850 | | Delaware |
| Miami Douglas Two GP LLC* | 04-1590850 | | Delaware |
| Miami Douglas Two LP* | 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 |
| Reston Arboretum LLC | 75-2901061 | | Delaware |
| Rockville Town Center LLC | 54-2055778 | | Virginia |
| Somerset Special Opportunities Fund L.P.* | 20-8856877 | | Delaware |
| SouthPointe Industrial LLC | 04-1590850 | | Delaware |
| Ten Fan Pier Boulevard LLC | 35-2553915 | | Delaware |
| Tower Square Capital Partners III, L.P. | 41-2280127 | | Delaware |
| Tower Square Capital Partners IIIA, L.P. | 41-2280129 | | Delaware |
| Tower Square Capital Partners IV-A, L.P. | 80-0920367 | | Delaware |
| Trailside MM Member LLC* | 04-1590850 | | Delaware |
| Washington Gateway Two LLC* | 83-1325764 | | Delaware |
| Washington Gateway Three LLC* | 32-0574045 | | Delaware |
| West 46 th Street Hotel LLC | 05-1590850 | | Delaware |
| Barings Affiliates & Funds: | | | |
| Barings Emerging Markets Debt Short Duration Fund | None | | Ireland |
| Babson Capital Loan Strategies Master Fund LP | None | | Cayman Islands |
| Barings China Aggregate Bond Private Securities Investment Fund | None | | Peoples Republic of China |
| Barings Global High Yield Fund | 47-3790192 | | Massachusetts |
| Barings Total Return Bond Fund | 47-3734770 | | Massachusetts |
| Great Lakes II LLC* | 71-1018134 | | Delaware |
| Wood Creek Venture Fund LLC | 04-1590850 | | Delaware |
| Barings Real Estate Affiliates & Funds: | | | |
| 50 Liberty LLC* | 36-4823011 | | Delaware |
| Barings California Mortgage Fund IV | None | | California |
| Barings Umbrella Fund LUX SCSp SICAV RAIF* | None | | Luxembourg |
| Calgary Railway Holding LLC* | 82-2285211 | | Delaware |

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

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

| | <u>Federal Tax ID</u> | <u>NAIC Co Code</u> | <u>State of Domicile</u> |
|--|-----------------------|---------------------|--------------------------|
| Combrook PRS Holdings LLC | 82-3307907 | | Delaware |
| Comerstone California Mortgage Fund I LLC | 95-4207717 | | California |
| Comerstone California Mortgage Fund II LLC | 95-4207717 | | California |
| Comerstone California Mortgage Fund III LLC | 95-4207717 | | California |
| Comerstone Fort Pierce Development LLC* | 56-2630592 | | Delaware |
| Comerstone Permanent Mortgage Fund | 45-2632610 | | Massachusetts |
| Comerstone Permanent Mortgage Fund II | 61-1750537 | | Massachusetts |
| Comerstone Permanent Mortgage Fund III | 35-2531693 | | Massachusetts |
| Comerstone Permanent Mortgage Fund IV | 61-1793735 | | Massachusetts |
| CREA Madison Member LLC | 81-0890084 | | Delaware |
| Danville Riverwalk Venture, LLC | 82-2783393 | | Delaware |
| Fan Pier Development LLC* | 20-3347091 | | Delaware |
| Landmark Manchester Holdings LLC | 81-5360103 | | Delaware |
| MM Island Member LLC | 04-1590850 | | Delaware |
| NoHo West Venture LLC | 83-0881588 | | Delaware |
| One Harbor Shore LLC* | 80-0948028 | | Delaware |
| PACO France Logistics 2 LLC | 04-1590850 | | Delaware |
| Portland 400 Sixth Manager LLC | 82-3393166 | | Delaware |
| Raleigh Crossing Phase I Holdings LLC | None | | Delaware |
| Salomon Brothers Commercial Mortgage Trust 2001-MM | None | | Delaware |
| Sawgrass Village Shopping Center LLC* | 27-2977720 | | Delaware |
| STOA Holding LLC | None | | Delaware |
| Three PW Office Holding LLC | 81-5273574 | | Delaware |
| Twenty Two Liberty LLC* | 35-2484550 | | Massachusetts |
| Unna, Dortmund Holding LLC | 82-3250684 | | Delaware |
| Washington Gateway Apartments Venture LLC* | 45-5401109 | | Delaware |
| MassMutual Premier Funds: | | | |
| MassMutual Barings Dynamic Allocation Fund | 45-3168892 | | Massachusetts |
| MassMutual Premier Focused International Fund | 02-0754273 | | Massachusetts |
| MassMutual Premier Main Street Fund | 51-0529328 | | Massachusetts |
| MassMutual Premier Strategic Emerging Markets Fund | 26-3229251 | | Massachusetts |
| MassMutual Premier Value Fund | 04-3277550 | | Massachusetts |
| MassMutual Select Funds: | | | |
| MassMutual Select Diversified International Fund | 14-1980900 | | Massachusetts |
| MassMutual Select Diversified Value Fund | 01-0821120 | | Massachusetts |
| MassMutual Select Fundamental Growth Fund | 04-3512593 | | Massachusetts |
| MassMutual Select Large Cap Value Fund | 04-3513019 | | 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

| | <u>Federal Tax ID</u> | <u>NAIC Co Code</u> | <u>State of Domicile</u> |
|--|-----------------------|---------------------|--------------------------|
| 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 2015 Fund | 27-1933828 | | Massachusetts |
| 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 RetireSMART Conservative Fund | 45-1618155 | | Massachusetts |
| MassMutual RetireSMART Growth Fund | 45-1618222 | | Massachusetts |
| MassMutual RetireSMART In Retirement Fund | 03-0532464 | | Massachusetts |
| MassMutual RetireSMART Moderate Fund | 45-1618262 | | Massachusetts |
| MassMutual RetireSMART Moderate Growth 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.

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

12.12

*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 MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|-------------------------------|-------------------|------------|--------------|-----|--|---|-----------------------|-----------------------------------|--|--|--|--|-----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domi-ciliary Location | Relation-ship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Re-quired? (Y/N) | * |
| .0435 | Massachusetts Mut Life Ins Co | 65935 | 04-1590850 | 3848388 | | | Massachusetts Mutual Life Insurance Company (MMLIC) | CT | UIP | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0435 | GM Life Ins Co | 93432 | 06-1041383 | | | | C.M. Life Insurance Company | CT | UDP | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0435 | MML Baystate Life Ins Co | 70416 | 43-0581430 | | | | MML Bay State Life Insurance Company | DE | 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 | IND | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Global Business Services India LLP | NLD | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MM Global Capabilities (Netherlands) B.V. | ROU | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Global Business Services Romania S.R.L. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MM Global Capabilities II LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MM Global Capabilities III LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MM/Barings Multifamily TEBS 2020 LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MML Special Situations Investor LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 47-5322979 | | | | Timberland Forest Holding LLC | DE | NIA | Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 47-5322979 | | | | Timberland Forest Holding LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 47-5322979 | | | | Timberland Forest Holding LLC | DE | NIA | Wood Creek Capital Management LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Lyme Adirondack Forest Company, LLC | DE | NIA | Timberland Forest Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Lyme Adirondack Timberlands I, LLC | DE | NIA | Timberland Forest Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Lyme Adirondack Timberlands II, LLC | DE | NIA | Timberland Forest Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Ascend LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | 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 | VT | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual MCAM Insurance Company, Inc. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Insurance Road LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MassMutual Trad Private Equity LLC | DE | NIA | Insurance Road LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MassMutual Private Equity Funds LLC | DE | NIA | MassMutual Trad Private Equity LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 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 | | | 27-0105644 | | | | Jefferies Finance LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 50.000 | MMLIC | | 1 |
| .0000 | | | | | | | Glidepath Holdings Inc. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Mortgage Lending LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------------|-------------------|------------|--------------|-----|--|---|----------------------|----------------------------------|--|--|--|--|----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domiciliary Location | Relationship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Required? (Y/N) | * |
| .0000 | | | | | | | Apex Credit Partners 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 | | | | | | | Jefferies Credit Management LLC | DE | NIA | Jefferies Credit Partners LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Jefferies Private Credit GP LLC | DE | NIA | Jefferies Credit Management LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Jefferies Private Credit Fund LP | MD | NIA | Jefferies Private Credit GP LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Jefferies Private Credit BDC Inc. | DE | 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 | | | | | | | JFIN Fund VI LLC | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Asset Management LLC | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFAM GP LLC | DE | NIA | JFIN Asset Management, LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFAM GP LP | DE | NIA | JFIN Asset Management, LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Jefferies Direct Lending Fund C LP | DE | NIA | JFIN Asset Management, LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Jefferies DLF C Holdings LLC | DE | NIA | Jefferies Direct Lending Fund C LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Jefferies Direct Lending Fund C SPE LLC | DE | NIA | Jefferies DLF C Holdings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Revolver Holdings LLC | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Revolver Holdings II LLC | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Co-Issuer Corporation | LUX | 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 | DE | NIA | JFIN Europe GP, S.a.r.l. | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Jefferies Finance Business Credit LLC | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Business Credit Fund I LLC | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN High Yield Investments LLC | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN LC Fund LLC | CYM | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN CLO 2012 Ltd. | CYM | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN CLO 2013 Ltd. | CYM | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN CLO 2014-II Ltd. | CYM | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN CLO 2015 Ltd. | CYM | NIA | Jefferies Finance LLC | Ownership | 44.000 | MMLIC | | |
| .0000 | | | | | | | JFIN CLO 2015 Ltd. | CYM | NIA | Apex Credit Partners LLC | Ownership | 56.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Revolver CLO 2014 Ltd. | CYM | 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. | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Revolver Fund, L.P. | DE | NIA | Jefferies Finance LLC | Ownership | 90.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Revolver Funding 2021 Ltd. | CYM | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Apex Credit CLO 2015-II Ltd. | CYM | NIA | Jefferies Finance LLC | Ownership | 33.000 | MMLIC | | |
| .0000 | | | | | | | Apex Credit CLO 2015-II Ltd. | CYM | NIA | Apex Credit Partners LLC | Ownership | 53.000 | MMLIC | | |
| .0000 | | | | | | | Apex Credit CLO 2016 Ltd. | CYM | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Apex Credit CLO 2017 Ltd. | CYM | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Apex Credit CLO 2017-II Ltd. | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MM Copper Hill Road LLC | CYM | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MM Investment Holding | DE | 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 | | |

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------------|-------------------|------------|--------------|-----|--|--|----------------------|----------------------------------|--|--|--|--|----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domiciliary Location | Relationship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Required? (Y/N) | * |
| .0000 | | | 38-3969560 | | | | 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 | | | | | | | Rozier LLC | MA | NIA | MassMutual Asset Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-2443240 | | | | MML Management Corporation | MA | NIA | MML Investment Holding | Ownership | 100.000 | MMLIC | Y | |
| .0000 | | | 04-3548444 | | | | MassMutual International Holding MSC, Inc. | MA | NIA | MML Management Corporation | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-3341767 | | | | MassMutual Holding MSC, Inc. | DE | NIA | MML Management Corporation | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MML CM LLC | NY | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Blueprint Income LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Flourish Financial LLC | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-3356880 | | | | MML Distributors LLC | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 99.000 | MMLIC | | |
| .0000 | | | 04-3356880 | | | | MML Distributors LLC | DE | 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 | CT | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 06-1563535 | 2881445 | | | The MassMutual Trust Company, FSB | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | Y | |
| .0000 | | | 04-1590850 | | | | MML Private Placement Investment Company I, LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MML Private Equity Fund Investor LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MML Private Equity Fund Investor LLC | DE | NIA | Baring Asset Management Limited | Management | | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MML Private Equity Intercontinental LLC | DE | NIA | MML Private Equity Fund Investor LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 45-2738137 | | | | Pioneers Gate LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-2854319 | 2392316 | | | MassMutual Holding LLC | NC | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | Y | |
| .0000 | | | 06-1597528 | | | | MassMutual Assignment Company | DE | NIA | MassMutual Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 37-1732913 | | | | Fern Street LLC | DE | NIA | MassMutual Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Steeper 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 | GBR | NIA | MassMutual Ventures Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Crane Venture Partners LLP | DE | NIA | MassMutual Ventures Holding LLC | Ownership | 33.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Ventures Management LLC | DE | NIA | MassMutual Ventures Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Ventures SEA Management Private Limited | DE | NIA | MassMutual Ventures Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Ventures Southeast Asia I LLC | DE | NIA | MassMutual Ventures Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Ventures Southeast Asia II LLC | DE | NIA | MassMutual Ventures Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Ventures UK LLC | DE | NIA | MassMutual Ventures Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 47-1296410 | | | | MassMutual Ventures US I LLC | DE | NIA | MassMutual Ventures Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Ventures US II LLC | DE | NIA | MassMutual Ventures Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Ventures US III LLC | DE | NIA | MassMutual Ventures Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Open Alternatives LLC | DE | NIA | MassMutual Ventures Holding LLC | Ownership | 100.000 | MMLIC | | |

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------------|-------------------|------------|--------------|-----|--|--|-----------------------|-----------------------------------|---|--|--|--|-----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domi-ciliary Location | Relation-ship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Re-quired? (Y/N) | * |
| .0000 | | | 04-1590850 | | | | MM Rothesay Holdco US LLC | .GBR | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Rothesay Limited | .GBR | NIA | MM Rothesay Holdco US LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Rothesay Life Plc | .GBR | NIA | Rothesay Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Rothesay Assurance Limited | .GBR | NIA | Rothesay Life PLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Rothesay MA No.1 Limited | .GBR | NIA | Rothesay Life PLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Rothesay MA No.2 Limited | .GBR | NIA | Rothesay Life PLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Rothesay MA No.3 Limited | .GBR | NIA | Rothesay Life PLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Rothesay MA No.4 Limited | .GBR | NIA | Rothesay Life PLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | LT Mortgage Finance Limited | .GBR | NIA | Rothesay Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Rothesay Property Partnership 1 LLP | .GBR | NIA | Rothesay Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Rothesay Foundation | .GBR | NIA | Rothesay Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Rothesay Pensions Management Limited | .GBR | NIA | Rothesay Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Rothesay Asset Management UK Limited | .DE | NIA | Rothesay 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 | .MA | NIA | MassMutual Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 47-1466022 | | | | LifeScore Labs, LLC | .MA | NIA | MassMutual Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MML Investors Services, LLC | .MA | NIA | MassMutual Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MML Insurance Agency, LLC | .DE | NIA | MML Investors Services, LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 41-2011634 | | | | MMLISI Financial Alliances, LLC | .DE | NIA | MML Investors Services, LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 45-4000072 | | | | MM Asset Management Holding LLC | .DE | NIA | MassMutual Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 51-0504477 | | | | Barings LLC | .HKG | NIA | MassMutual Asset Management Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0524271 | | | | Baring Asset Management (Asia) Holdings Limited | .BMU | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457465 | | | | Baring International Fund Managers (Bermuda) Limited | .HKG | NIA | Baring Asset Management (Asia) Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457463 | | | | Baring Asset Management (Asia) Limited | .KOR | NIA | Baring Asset Management (Asia) Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Baring Asset Management Korea Limited | .HKG | 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 | .TIW | NIA | Baring Asset Management (Asia) Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457707 | | | | Baring SICE (Taiwan) Limited | .SGP | NIA | Baring Asset Management (Asia) Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Singapore Pte. Ltd. | .JPN | NIA | Baring Asset Management (Asia) Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0236449 | | | | Barings Japan Limited | .AUS | NIA | Baring Asset Management (Asia) Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Australia Holding Company Pty Ltd | .AUS | NIA | Baring Asset Management (Asia) Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457456 | | | | Barings Australia Pty Ltd | .DE | NIA | Baring Australia Holding Company Pty Ltd. | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 80-0875475 | | | | Barings Finance LLC | .IRL | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | BCF Europe Funding Limited | .DE | NIA | Barings Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | BCF Senior Funding I LLC | .IRL | NIA | Barings Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | BCF Senior Funding I Designated Activity Company | .DE | NIA | Barings Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-3238351 | | | | Barings Securities LLC | .GGY | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0437588 | | | | Barings Guernsey Limited | .GBR | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Europe Limited | .ESP | NIA | Barings Guernsey Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Asset Management Spain SL | .ITA | NIA | Barings Europe Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Italy S.r.l. | .SWE | NIA | Barings Europe Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Sweden AB | .FIN | NIA | Barings Europe Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Finland Oy | .NLD | NIA | Barings Europe Limited | Ownership | 100.000 | MMLIC | | |

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------------|-------------------|------------|--------------|-----|--|---|-----------------------|-----------------------------------|--|--|--|--|-----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domi-ciliary Location | Relation-ship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Re-quired? (Y/N) | * |
| .0000 | | | | | | | Barings Netherlands B.V. | .DE | NIA | Barings Europe Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Real Estate UK Holdings Limited | .GBR | NIA | Barings Europe Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | BREAIE AIFM LLP | .GBR | NIA | Barings Real Estate UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0654401 | | | | Barings Real Estate Advisers (Continental Europe) Limited | .GBR | NIA | Barings Real Estate UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0654388 | | | | Barings Real Estate Advisers Europe LLP | .GBR | NIA | Barings Real Estate UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0654412 | | | | Barings Real Estate Advisers Europe Finance LLP | .DEU | NIA | Barings Real Estate UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-1194368 | | | | Barings Real Estate GmbH | .GBR | NIA | Barings Real Estate UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0241935 | | | | Barings Asset Management Limited | .GBR | NIA | MassMutual Holdings (Bermuda) Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings European Direct Lending 1 GP LLP | .GBR | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-1012393 | | | | Barings Global Advisors Limited | .GBR | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457328 | | | | Barings International Investment Limited | .GBR | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457587 | | | | Barings International Investment Management Holdings | .GBR | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457576 | | | | Barings Asset Management UK Holdings Limited | .DEU | NIA | Barings International Investment Management Holdings | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0465031 | | | | Barings Asset Management GmbH | .IRL | NIA | Barings Asset Management UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0524272 | | | | Barings International Fund Managers (Ireland) Limited | .CHE | NIA | Barings Asset Management UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Asset Management Switzerland Sarl | .FRA | NIA | Barings Asset Management UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0497550 | | | | Barings France SAS | .GBR | NIA | Barings Asset Management UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457586 | | | | Barings Fund Managers Limited | .GBR | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | BOGSS 2 GP LLP | .GBR | NIA | Barings Fund Managers Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457574 | | | | Barings Pension Trustees Limited | .GBR | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457578 | | | | Barings Investment Services Limited | .LUX | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Core Fund Feeder 1 GP S.a.r.l. | .GBR | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings BME GP S.a.r.l. | .LUX | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings GPC GP S.a. r.l | .GBR | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings European Core Property Fund GP Sarl | .LUX | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Investment Fund (LUX) GP S.a. r.l | .LUX | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Umbrella Fund (LUX) GP S.a.r.l. | .LUX | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | GPLF4(S) GP S.a. r.l | .GBR | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | PREIF Holdings Limited Partnership | .GBR | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine Fund II Limited | .GBR | NIA | Barings Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0432153 | | | | Barings (U.K.) Limited | .DE | NIA | Barings Guernsey Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Multifamily Capital Holdings LLC | .MI | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Multifamily Capital LLC | .DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Multifamily Capital Corporation | .CA | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-3238351 | 3456895 | | | Barings Real Estate Advisers Inc. | .DE | NIA | Barings Real Estate Advisers 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 | | | 81-2244465 | | | | Chassis Acquisition Holding LLC | .DE | NIA | Barings LLC | Influence | | 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 | Massachusetts Mutual Life Insurance Company | Ownership | 26.700 | MMLIC | | |
| .0000 | | | 83-0560183 | | | | Aland Royalty Holdings LP | .CYM | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | ASM SIP, LP | .CYM | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 13.200 | MMLIC | | |

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------------|-------------------|------------|--------------|-----|--|---|----------------------|----------------------------------|--|--|--|--|----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domiciliary Location | Relationship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Required? (Y/N) | * |
| .0000 | | | | | | | ASM SIP, LP | DE | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 46-2344300 | | | | Intermodal Holdings II LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 18.000 | MMLIC | | |
| .0000 | | | 47-3055009 | | | | Milestone Acquisition Holding, LLC | DE | NIA | MassMutual Holding LLC | Ownership/Influence | 19.700 | MMLIC | | |
| .0000 | | | 47-3055009 | | | | Milestone Acquisition Holding, LLC | MD | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Novation Companies, Inc. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 17.100 | 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 | CT | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 81-4065378 | | | | Remington L & W Holdings LLC | CT | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 66.300 | MMLIC | | |
| .0000 | | | 81-4065378 | | | | Remington L & W Holdings LLC | DE | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Tamiami Citrus, LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 15.700 | MMLIC | | |
| .0000 | | | | | | | Teaktree Acquisition, LLC | DE | NIA | MassMutual Holding LLC | Ownership/Influence | 14.700 | MMLIC | | |
| .0000 | | | | | | | Teaktree Acquisition, LLC | DE | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Techquity, LP | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 15.600 | MMLIC | | |
| .0000 | | | | | | | Techquity, LP | DE | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 46-0687392 | | | | Validus Holdings Company LLC | DE | NIA | Barings LLC | Ownership | 40.400 | MMLIC | | |
| .0000 | | | | | | | Validus Pharmaceuticals LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 70.000 | MMLIC | | |
| .0000 | | | | | | | VGS Acquisition Holding, LLC | DE | NIA | MassMutual Holding LLC | Ownership/Influence | 33.300 | MMLIC | | |
| .0000 | | | | | | | VGS Acquisition Holding, LLC | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Aland Royalty GP, LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Alaska Future Fund GP, LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | BAI GP, LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | BAI Funds SLP, LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Baring Asset-Based Income Fund (US) GP, LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Investment Series LLC | MD | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Capital Investment 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 Global Investment Funds (U.S.) Management LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Barings ABIF SLP, 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 | CYM | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Direct Lending GP Ltd. | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 84-3784245 | | | | Barings Emerging Generation Fund LP | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | 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 North American Private Loan Fund Management, LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings North American Private Loan Fund Management II, LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Global Real Assets Fund GP, LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings GPSF | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings/LAZ Parking Fund GP LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 84-5063008 | | | | Barings Small Business Fund LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 42.300 | MMLIC | | |
| .0000 | | | 84-5063008 | | | | Barings Small Business Fund LLC | CYM | NIA | Barings LLC | Management | | MMLIC | | |

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------------|-------------------|------------|--------------|-----|--|--|-----------------------|-----------------------------------|--|--|--|--|-----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domi-ciliary Location | Relation-ship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Re-quired? (Y/N) | * |
| .0000 | | | 98-0536233 | | | | Benton Street Advisors, Inc. | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | BRECS VII GP LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | CCM Fund I REIT Manager LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | CHY Venture GP LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | CREX X GP LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Great Lakes III GP, LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Lake Jackson LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Loan Strategies Management LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 41-2280126 | | | | Mezzco III LLC | DE | NIA | Barings LLC | Ownership | 99.300 | MMLIC | | |
| .0000 | | | 80-0920285 | | | | Mezzco IV LLC | DE | NIA | Barings LLC | Ownership | 99.300 | MMLIC | | |
| .0000 | | | | | | | Mezzco Australia II LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | 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 | | | 04-1590850 | | | | Somerset Special Opportunities Management LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Amherst Long Term Holdings, LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 24.500 | MMLIC | | |
| .0000 | | | 04-3313782 | | | | MassMutual International LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | Y | |
| .0000 | | | | | | | MassMutual Solutions LLC | HKG | NIA | MassMutual International LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Haven Technologies Asia Limited | HKG | NIA | MassMutual International LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Yunfeng Financial Group Limited | HKG | NIA | MassMutual International LLC | Ownership | 24.900 | MMLIC | | |
| .0000 | | | | | | | MassMutual Asia Limited (SPV) | DE | NIA | MassMutual International LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MML Mezzanine Investor II, LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MML Mezzanine Investor III, LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 11.100 | MMLIC | | |
| .0000 | | | 27-3576835 | | | | MassMutual External Benefits Group LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | 100 w. 3rd Street LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | 2160 Grand Manager LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 98.100 | MMLIC | | |
| .0000 | | | 82-2432216 | | | | 300 South Tryon Hotel LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | 300 South Tryon LLC | GBR | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine Fund I LP | GBR | NIA | Company | Ownership/Influence | 41.400 | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine Fund I LP | GBR | NIA | C.M. Life Insurance Company | Ownership | 4.600 | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine Fund II Unleveraged LP | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 72.900 | MMLIC | | |
| .0000 | | | | | | | Barings Affordable Housing Mortgage Fund I LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Affordable Housing Mortgage Fund I LLC | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 61-1902329 | | | | Barings Affordable Housing Mortgage Fund II LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 61-1902329 | | | | Barings Affordable Housing Mortgage Fund II LLC | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 85-3036663 | | | | Barings Affordable Housing Mortgage Fund III LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------------|-------------------|------------|--------------|-----|--|---|-----------------------|-----------------------------------|--|--|--|--|-----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domi-ciliary Location | Relation-ship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Re-quired? (Y/N) | * |
| .0000 | | | 85-3036663 | | | | Barings Affordable Housing Mortgage Fund III LLC | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 36-4868350 | | | | Barings Asset-Based Income Fund (US) LP | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 12.700 | MMLIC | | |
| .0000 | | | 36-4868350 | | | | Barings Asset-Based Income Fund (US) LP | DE | NIA | C.M. Life Insurance Company | Ownership/Influence | 1.300 | MMLIC | | |
| .0000 | | | 36-4868350 | | | | Barings Asset-Based Income Fund (US) LP | IRL | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Emerging Markets Corporate Bond Fund | | | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 90.300 | MMLIC | | |
| .0000 | | | | | | | Barings Emerging Markets Corporate Bond Fund | IRL | NIA | | | | | | |
| .0000 | | | | | | | Barings European Real Estate Debt Income Fund | LUX | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings European Real Estate Debt Income Fund | LUX | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings European Real Estate Debt Income Fund | DE | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 98-1206017 | | | | Babson Capital Global Special Situation Credit Fund 2 | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 23.800 | 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 | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 75.700 | MMLIC | | |
| .0000 | | | 37-1506417 | | | | Babson Capital Loan Strategies Fund, L.P. | DE | NIA | C.M. Life Insurance Company | Ownership | 3.800 | MMLIC | | |
| .0000 | | | 37-1506417 | | | | Babson Capital Loan Strategies Fund, L.P. | IRL | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings US High Yield Bond Fund | | | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 57.200 | MMLIC | | |
| .0000 | | | | | | | Barings US High Yield Bond Fund | IRL | NIA | | | | | | |
| .0000 | | | | | | | Babson CLO Ltd. 2013-I | CYM | NIA | Barings LLC | Influence | | MMLIC | | 3 |
| .0000 | | | | | | | Babson CLO Ltd. 2014-I | CYM | NIA | Barings LLC | Influence | | MMLIC | | 2 |
| .0000 | | | | | | | Babson CLO Ltd. 2015-I | CYM | NIA | Barings LLC | Influence | | MMLIC | | 4 |
| .0000 | | | | | | | Babson CLO Ltd. 2015-II | CYM | NIA | Barings LLC | Influence | | MMLIC | | 5 |
| .0000 | | | | | | | Babson CLO Ltd. 2016-I | CYM | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Babson CLO Ltd. 2016-II | CYM | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Barings CLO Ltd. 2017-I | CYM | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Barings CLO 2018-III | CYM | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 98-1473665 | | | | Barings CLO 2018-IV | CYM | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | 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 | NLD | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Babson Euro CLO 2014-I BV | NLD | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Babson Euro CLO 2014-II BV | NLD | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Babson Euro CLO 2015-I BV | NLD | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Babson Euro CLO 2016-I BV | IRL | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 36-037260H | | | | Barings Euro CLO 2019-I BV | IRL | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Barings Euro CLO 2019-II BV | IRL | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Barings Euro CLO 2020-I DAC | DE | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 81-0841854 | | | | Barings CLO Investment Partners LP | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 99.300 | MMLIC | | |
| .0000 | | | 81-0841854 | | | | Barings CLO Investment Partners LP | GBR | NIA | Barings LLC | Management | | MMLIC | | |

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------------|-------------------|------------|--------------|-----|--|---|----------------------|----------------------------------|--|--|--|--|----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domiciliary Location | Relationship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Required? (Y/N) | * |
| .0000 | | | | | | | Barings Real Estate European Value Add I SCSp | .GBR | .NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 44.700 | MMLIC | | |
| .0000 | | | | | | | Barings Real Estate European Value Add I SCSp | .GBR | .NIA | C.M. Life Insurance Company | Ownership | 5.000 | MMLIC | | |
| .0000 | | | | | | | Barings Real Estate European Value Add I SCSp | .NC | .NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 82-5330194 | | | | Barings Global Em. Markets Equity Fund | .CYM | .NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 98-1332384 | | | | 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 | .IRL | .NIA | Barings Asset Management Limited | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Global Dividends Champion Fund | .IRL | .NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Global Inv. Grade Strat Fund | .LUX | .NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Global Private Loan Fund | .LUX | .NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 10.400 | MMLIC | | |
| .0000 | | | | | | | Barings Global Private Loan Fund | .DE | .NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 82-3867745 | | | | Barings Global Real Assets Fund LP | .DE | .NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 46.400 | MMLIC | | |
| .0000 | | | 82-3867745 | | | | Barings Global Real Assets Fund LP | .DE | .NIA | C.M. Life Insurance Company | Ownership | 8.200 | MMLIC | | |
| .0000 | | | 82-3867745 | | | | Barings Global Real Assets Fund LP | .IRL | .NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Global Special Situations Credit Fund 3 | .DE | .NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 18.600 | MMLIC | | |
| .0000 | | | | | | | Barings Global Special Situations Credit 4 Delaware | .DE | .NIA | Massachusetts Mutual Life Insurance Company | Ownership | 76.500 | MMLIC | | |
| .0000 | | | | | | | Barings Global Special Situations Credit 4 Delaware | .DE | .NIA | C.M. Life Insurance Company | Ownership | 3.800 | MMLIC | | |
| .0000 | | | | | | | Barings Global Special Situations Credit 4 Delaware | .LUX | .NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Global Special Situations Credit 4 LUX | .LUX | .NIA | Massachusetts Mutual Life Insurance Company | Ownership | 28.500 | MMLIC | | |
| .0000 | | | | | | | Barings Global Special Situations Credit 4 LUX | .LUX | .NIA | C.M. Life Insurance Company | Ownership | 1.500 | MMLIC | | |
| .0000 | | | | | | | Barings Global Special Situations Credit 4 LUX | .IRL | .NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Global Special Situations Credit Fund 3 | .CYM | .NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Middle Market CLO 2017-I Ltd & LLC | .CYM | .NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Barings Middle Market CLO 2018-I | .CYM | .NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Barings Middle Market CLO 2019-I | .DE | .NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 38-4010344 | | | | Barings North American Private Loan Fund LP | .DE | .NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 44.500 | MMLIC | | |
| .0000 | | | 38-4010344 | | | | Barings North American Private Loan Fund LP | .DE | .NIA | Barings Asset Management Limited | Management | | MMLIC | | |
| .0000 | | | 98-1332384 | | | | Barings RE Credit Strategies VII LP | .DE | .NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 34.100 | MMLIC | | |
| .0000 | | | 98-1332384 | | | | Barings RE Credit Strategies VII LP | .DE | .NIA | Barings Asset Management Limited | Management | | MMLIC | | |
| .0000 | | | | | | | Braemar Energy Ventures I, L.P. | .DE | .NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 90.100 | MMLIC | | |
| .0000 | | | | | | | Braemar Energy Ventures I, L.P. | .DE | .NIA | C.M. Life Insurance Company | Ownership | 1.400 | MMLIC | | |
| .0000 | | | | | | | Braemar Energy Ventures I, L.P. | .LUX | .NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings European Core Property Fund SCSp | .LUX | .NIA | MassMutual Holding LLC | Ownership/Influence | 10.400 | MMLIC | | |
| .0000 | | | | | | | Barings European Core Property Fund SCSp | .LUX | .NIA | C.M. Life Insurance Company | Ownership | 0.700 | MMLIC | | |
| .0000 | | | | | | | Barings European Core Property Fund SCSp | .NY | .NIA | Barings Real Estate Advisers LLC | Management | | MMLIC | | |
| .0000 | | | 38-4059932 | | | | Benchmark 2018-B2 Mortgage Trust | .NY | .NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Benchmark 2018-B4 | .NY | .NIA | Barings LLC | Influence | | MMLIC | | |

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------------|-------------------|------------|--------------|------------|--|---|----------------------|----------------------------------|--|--|--|--|----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domiciliary Location | Relationship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Required? (Y/N) | * |
| .0000 | | | 38-4096530 | | | | Benchmark 2018-B8 | DE | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Braselton Point LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 20-5578089 | | | | Barings Core Property Fund LP | DE | NIA | MassMutual Holding LLC | Ownership/Influence | 17.800 | MMLIC | | |
| .0000 | | | 20-5578089 | | | | Barings Core Property Fund LP | DE | NIA | Barings Real Estate Advisers LLC | Management | | MMLIC | | |
| .0000 | | | 46-5432619 | | | | Cornerstone Real Estate Fund X LP | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 25.300 | MMLIC | | |
| .0000 | | | 46-5432619 | | | | Cornerstone Real Estate Fund X LP | DE | NIA | C.M. Life Insurance Company | Ownership | 2.800 | MMLIC | | |
| .0000 | | | 46-5432619 | | | | Cornerstone Real Estate Fund X LP | MA | 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 | 95.800 | MMLIC | | |
| .0000 | | | 61-1793735 | | | | Cornerstone Permanent Mortgage Fund IV LLC | DE | 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 | 33.500 | MMLIC | | |
| .0000 | | | 90-0991195 | | 0001597511 | | Gateway Mezzanine Partners II LP | DE | NIA | C.M. Life Insurance Company | Ownership | 5.000 | MMLIC | | |
| .0000 | | | 82-2932156 | | | | GASL Holdings, LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 11.300 | 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 | 41.200 | MMLIC | | |
| .0000 | | | 37-1708623 | | | | Great Lakes III, L.P. | NY | 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 | DE | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 82-1512591 | | | | KKR-MM Vector LP | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 77.700 | MMLIC | | |
| .0000 | | | 46-4255307 | | | | Marco Hotel LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Miami Douglas One GP LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Miami Douglas One GP LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 5.500 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Miami Douglas Two GP LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 84.100 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Miami Douglas Two GP LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Miami Douglas Two LP | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 90.000 | MMLIC | | |
| .0000 | | | 85-3886824 | | | | NYDIG Digital Assets Fund II LP | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Miami Douglas Two LP | DE | NIA | C.M. Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 45-3623262 | | | | HB Naples Golf Owner LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MM CM Holding LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 81-3000420 | | | | MM Debt Participations LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 100.000 | MMLIC | | |
| .0000 | | | 81-3000420 | | | | MM Debt Participations LLC | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 82-4411267 | | | | RB Apartments LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 75-2901061 | | | | Reston Arboretum LLC | VA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 54-2055778 | | | | Rockville Town Center LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------------|-------------------|------------|--------------|-----|--|---|-----------------------|-----------------------------------|--|--|--|--|-----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domi-ciliary Location | Relation-ship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Re-quired? (Y/N) | * |
| .0000 | | | 20-8856877 | | | | Somerset Special Opportunities Fund L.P. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 40.100 | MMLIC | | |
| .0000 | | | 20-8856877 | | | | Somerset Special Opportunities Fund L.P. | DE | NIA | C.M. Life Insurance Company | Ownership | 1.900 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | SouthPointe Industrial LLC | DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 35-2553915 | | | | Ten Fan Pier Boulevard LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 41-2280127 | | | | Tower Square Capital Partners III, L.P. | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 41-2280127 | | | | Tower Square Capital Partners III, L.P. | DE | NIA | MassMutual Holding LLC | Ownership/Influence | 16.900 | MMLIC | | |
| .0000 | | | 41-2280129 | | | | Tower Square Capital Partners IIIA, L.P. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 90.400 | MMLIC | | |
| .0000 | | | 41-2280129 | | | | Tower Square Capital Partners IIIA, L.P. | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 80-0920367 | | | | Tower Square Capital Partners IV-A, L.P. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 21.300 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Trailside MM Member LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 59.600 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Trailside MM Member LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 7.400 | MMLIC | | |
| .0000 | | | 83-1325764 | | | | Washington Gateway Two LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 95.400 | 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 | 95.100 | MMLIC | | |
| .0000 | | | 32-0574045 | | | | Washington Gateway Three LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 11.400 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | West 46th Street Hotel LLC | IRL | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Emerging Markets Debt Short Duration Fund | CYM | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Babson Capital Loan Strategies Master Fund LP | CHN | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings China Aggregate Bond Private Securities Investment Fund | MA | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 47-3790192 | | | | Barings Global High Yield Fund | MA | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 47-3734770 | | | | Barings Total Return Bond Fund | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 71-1018134 | | | | Great Lakes II LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 11.200 | MMLIC | | |
| .0000 | | | 71-1018134 | | | | Great Lakes II LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 1.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Wood Creek Venture Fund LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 40.000 | MMLIC | | |
| .0000 | | | 36-4823011 | | | | 50 Liberty LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 65.000 | MMLIC | | |
| .0000 | | | 36-4823011 | | | | 50 Liberty LLC | CA | NIA | C.M. Life Insurance Company | Ownership | 5.800 | MMLIC | | |
| .0000 | | | | | | | Barings California Mortgage Fund IV | LUX | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Umbrella Fund LUX SCSp SICAV RAIF | LUX | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 26.100 | MMLIC | | |
| .0000 | | | | | | | Barings Umbrella Fund LUX SCSp SICAV RAIF | DE | 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 | CA | 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 | | |

13.10

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------------|-------------------|------------|--------------|-----|--|--|-----------------------|-----------------------------------|--|--|--|--|-----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domi-ciliary Location | Relation-ship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Re-quired? (Y/N) | * |
| .0000 | | | 95-4207717 | | | | Cornerstone California Mortgage Fund III LLC | DE | 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 | MA | 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 | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 81-0890084 | | | | CREA Madison Member LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 82-2783393 | | | | Danville Riverwalk Venture, LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 94.400 | MMLIC | | |
| .0000 | | | 20-3347091 | | | | Fan Pier Development LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 66.200 | MMLIC | | |
| .0000 | | | 20-3347091 | | | | Fan Pier Development LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 5.900 | MMLIC | | |
| .0000 | | | 81-5360103 | | | | Landmark Manchester Holdings LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MM Island Member LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 49.000 | MMLIC | | |
| .0000 | | | 83-0881588 | | | | NoHo West Venture LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 94.800 | MMLIC | | |
| .0000 | | | 80-0948028 | | | | One Harbor Shore LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 76.000 | MMLIC | | |
| .0000 | | | 80-0948028 | | | | One Harbor Shore LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 6.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | PACO France Logistics 2 LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 82-3393166 | | | | Portland 400 Sixth Manager LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 95.000 | MMLIC | | |
| .0000 | | | | | | | Raleigh Crossing Phase I Holdings LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 90.000 | MMLIC | | |
| .0000 | | | | | | | Salomon Brothers Commercial Mortgage Trust 2001-MM | DE | NIA | Barings Real Estate Advisers LLC | Influence | | MMLIC | | |
| .0000 | | | 27-2977720 | | | | Savgrass Village Shopping Center LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 84.200 | MMLIC | | |
| .0000 | | | 27-2977720 | | | | Savgrass Village Shopping Center LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 15.800 | MMLIC | | |
| .0000 | | | | | | | STOA Holding LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 50.000 | MMLIC | | |
| .0000 | | | 81-5273574 | | | | Three PW Office Holding LLC | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 95.100 | MMLIC | | |
| .0000 | | | 35-2484550 | | | | Twenty Two Liberty LLC | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 65.000 | MMLIC | | |
| .0000 | | | 35-2484550 | | | | Twenty Two Liberty LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 35.000 | MMLIC | | |
| .0000 | | | 82-3250684 | | | | Unna, Dortmund Holding LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 45-5401109 | | | | Washington Gateway Apartments Venture LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 95.400 | MMLIC | | |
| .0000 | | | 45-5401109 | | | | Washington Gateway Apartments Venture LLC | MA | NIA | C.M. Life Insurance Company | Ownership | 3.700 | MMLIC | | |
| .0000 | | | 45-3168892 | | | | MassMutual Barings Dynamic Allocation Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |

13.11

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------------|-------------------|------------|--------------|------------|--|--|-----------------------|-----------------------------------|--|--|--|--|-----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domi-ciliary Location | Relation-ship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Re-quired? (Y/N) | * |
| .0000 | | | 51-0529328 | | 0000927972 | QO | MassMutual Premier Main Street Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 91.900 | MMLIC | | |
| .0000 | | | 26-3229251 | | 0000927972 | QO | MassMutual Premier Strategic Emerging Markets Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 3.400 | MMLIC | | |
| .0000 | | | 04-3277550 | | 0000927972 | QO | MassMutual Premier Value Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 14-1980900 | | 0000916053 | QO | MassMutual Select Diversified International Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 01-0821120 | | 0000916053 | QO | MassMutual Select Diversified Value Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.700 | MMLIC | | |
| .0000 | | | 04-3512593 | | 0000916053 | QO | MassMutual Select Fundamental Growth Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 2.800 | MMLIC | | |
| .0000 | | | 04-3513019 | | 0000916053 | QO | MassMutual Select Large Cap Value Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 42-1710935 | | 0000916053 | QO | MassMutual Select Mid-Cap Value Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 16.300 | MMLIC | | |
| .0000 | | | 02-0769954 | | 0000916053 | QO | MassMutual Select Small Capital Value Equity Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 04-3584140 | | 0000916053 | QO | MassMutual Select Small Company Value Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 4.400 | MMLIC | | |
| .0000 | | | 82-3347422 | | 0000916053 | QO | MassMutual Select T. Rowe Price Retirement 2005 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 8.600 | MMLIC | | |
| .0000 | | | 82-3355639 | | 0000916053 | QO | MassMutual Select T. Rowe Price Retirement 2010 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 82-3382389 | | 0000916053 | QO | MassMutual Select T. Rowe Price Retirement 2015 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 82-3396442 | | 0000916053 | QO | MassMutual Select T. Rowe Price Retirement 2020 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 82-3417420 | | 0000916053 | QO | MassMutual Select T. Rowe Price Retirement 2025 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 82-3430358 | | 0000916053 | QO | MassMutual Select T. Rowe Price Retirement 2030 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 82-3439837 | | 0000916053 | QO | MassMutual Select T. Rowe Price Retirement 2035 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 82-3451779 | | 0000916053 | QO | MassMutual Select T. Rowe Price Retirement 2040 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 82-3472295 | | 0000916053 | QO | MassMutual Select T. Rowe Price Retirement 2045 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 82-3481715 | | 0000916053 | QO | MassMutual Select T. Rowe Price Retirement 2050 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 82-3502011 | | 0000916053 | QO | MassMutual Select T. Rowe Price Retirement 2055 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 82-3525148 | | 0000916053 | QO | MassMutual Select T. Rowe Price Retirement 2060 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 82-3533944 | | 0000916053 | QO | MassMutual Select T. Rowe Price Retirement Balanced Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 46-4257056 | | | | MML Series International Equity Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 47-3517233 | | | | MML Series II Asset Momentum Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 47-3529636 | | | | MML Series II Dynamic Bond Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 47-3544629 | | | | MML Series II Equity Rotation Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 95.000 | MMLIC | | |

13.12

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------------|-------------------|------------|--------------|------------|--|---|------------------------|-----------------------------------|--|--|--|--|-----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domi-ciliary 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 Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Re-quired? (Y/N) | * |
| .0000 | | | 47-3559064 | | | | MML Series II Special Situations Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 97.400 | MMLIC | | |
| .0000 | | | 27-1933828 | | 0000916053 | QQ | MassMutual RetireSMART 2015 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 27-1933389 | | 0000916053 | QQ | MassMutual RetireSMART 2035 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 3.100 | MMLIC | | |
| .0000 | | | 27-1932769 | | 0000916053 | QQ | MassMutual RetireSMART 2045 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 8.700 | MMLIC | | |
| .0000 | | | 46-3289207 | | 0000916053 | QQ | MassMutual RetireSMART 2055 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 25.500 | MMLIC | | |
| .0000 | | | 47-5326235 | | 0000916053 | QQ | MassMutual RetireSMART 2060 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 55.500 | MMLIC | | |
| .0000 | | | 45-1618155 | | 0000916053 | QQ | MassMutual RetireSMART Conservative Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 45-1618222 | | 0000916053 | QQ | MassMutual RetireSMART Growth Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 03-0532464 | | 0000916053 | QQ | MassMutual RetireSMART In Retirement Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 1.700 | MMLIC | | |
| .0000 | | | 45-1618262 | | 0000916053 | QQ | MassMutual RetireSMART Moderate Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 45-1618046 | | 0000916053 | QQ | MassMutual RetireSMART Moderate Growth Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |

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

SUPPLEMENTAL EXHIBITS AND SCHEDULES INTERROGATORIES

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

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

Explanation:

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

Bar Code:

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



OVERFLOW PAGE FOR WRITE-INS

NONE

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE A - VERIFICATION

Real Estate

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

NONE

SCHEDULE B - VERIFICATION

Mortgage Loans

| | 1 Year to Date | 2 Prior Year Ended December 31 |
|---|-------------------|--------------------------------------|
| 1. Book value/recorded investment excluding accrued interest, December 31 of prior year | 2,090,393 | 2,358,494 |
| 2. Cost of acquired: | | |
| 2.1 Actual cost at time of acquisition | | |
| 2.2 Additional investment made after acquisition | 306 | 951 |
| 3. Capitalized deferred interest and other | | |
| 4. Accrual of discount | (6,463) | 1,302 |
| 5. Unrealized valuation increase (decrease) | | |
| 6. Total gain (loss) on disposals | | |
| 7. Deduct amounts received on disposals | 59,090 | 262,098 |
| 8. Deduct amortization of premium and mortgage interest points and commitment fees | 3,017 | 8,256 |
| 9. Total foreign exchange change in book value/recorded investment excluding accrued interest | | |
| 10. Deduct current year's other than temporary impairment recognized | | |
| 11. Book value/recorded investment excluding accrued interest at end of current period (Lines 1+2+3+4+5+6-7-8+9-10) | 2,022,129 | 2,090,393 |
| 12. Total valuation allowance | | |
| 13. Subtotal (Line 11 plus Line 12) | 2,022,129 | 2,090,393 |
| 14. Deduct total nonadmitted amounts | | |
| 15. Statement value at end of current period (Line 13 minus Line 14) | 2,022,129 | 2,090,393 |

SCHEDULE BA - VERIFICATION

Other Long-Term Invested Assets

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

NONE

SCHEDULE D - VERIFICATION

Bonds and Stocks

| | 1 Year to Date | 2 Prior Year Ended December 31 |
|---|-------------------|--------------------------------------|
| 1. Book/adjusted carrying value of bonds and stocks, December 31 of prior year | 243,446,731 | 306,408,829 |
| 2. Cost of bonds and stocks acquired | 434 | 13,906,404 |
| 3. Accrual of discount | 157,250 | 576,247 |
| 4. Unrealized valuation increase (decrease) | (6,379) | (177,444) |
| 5. Total gain (loss) on disposals | 324,283 | 742,092 |
| 6. Deduct consideration for bonds and stocks disposed of | 9,521,090 | 77,749,313 |
| 7. Deduct amortization of premium | 70,541 | 247,076 |
| 8. Total foreign exchange change in book/adjusted carrying value | | |
| 9. Deduct current year's other than temporary impairment recognized | 3,976 | 73,067 |
| 10. Total investment income recognized as a result of prepayment penalties and/or acceleration fees | 2,645 | 60,059 |
| 11. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9+10) | 234,329,357 | 243,446,731 |
| 12. Deduct total nonadmitted amounts | | |
| 13. Statement value at end of current period (Line 11 minus Line 12) | 234,329,357 | 243,446,731 |

STATEMENT AS OF MARCH 31, 2021 OF THE MML Bay State Life Insurance Company

SCHEDULE D - PART 1B

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

| NAIC Designation | 1 Book/Adjusted Carrying Value Beginning of Current Quarter | 2 Acquisitions During Current Quarter | 3 Dispositions During Current Quarter | 4 Non-Trading Activity During Current Quarter | 5 Book/Adjusted Carrying Value End of First Quarter | 6 Book/Adjusted Carrying Value End of Second Quarter | 7 Book/Adjusted Carrying Value End of Third Quarter | 8 Book/Adjusted Carrying Value December 31 Prior Year |
|-------------------------------------|---|--|--|--|---|--|---|---|
| BONDS | | | | | | | | |
| 1. NAIC 1 (a) | 201,275,220 | 34,475,739 | 44,580,283 | (1,319,952) | 189,850,724 | | | 201,275,220 |
| 2. NAIC 2 (a) | 121,327,818 | 120,467,984 | 99,331,751 | 733,798 | 143,197,849 | | | 121,327,818 |
| 3. NAIC 3 (a) | 20,054,570 | | 1,678,145 | 1,186,767 | 19,563,192 | | | 20,054,570 |
| 4. NAIC 4 (a) | 5,147,267 | | | (157,961) | 4,989,306 | | | 5,147,267 |
| 5. NAIC 5 (a) | 492,530 | | 105 | 412,276 | 904,701 | | | 492,530 |
| 6. NAIC 6 (a) | 697,083 | | 30,041 | (382,958) | 284,084 | | | 697,083 |
| 7. Total Bonds | 348,994,488 | 154,943,723 | 145,620,325 | 471,970 | 358,789,856 | | | 348,994,488 |
| 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 | 348,994,488 | 154,943,723 | 145,620,325 | 471,970 | 358,789,856 | | | 348,994,488 |

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

NAIC 1 \$64,974,066 ; NAIC 2 \$59,486,433 ; NAIC 3 \$; NAIC 4 \$; NAIC 5 \$; NAIC 6 \$

SCHEDULE DA - PART 1

Short-Term Investments

| | 1 | 2 | 3 | 4 | 5 |
|----------------|---------------------------------|-----------|-------------|------------------------------------|--|
| | Book/Adjusted Carrying Value | Par Value | Actual Cost | Interest Collected Year-to-Date | Paid for Accrued Interest Year-to-Date |
| 9199999 Totals | 69,970,807 | xxx | 69,918,878 | | |

SCHEDULE DA - VERIFICATION

Short-Term Investments

| | 1 | 2 |
|---|--------------|---------------------------------|
| | Year To Date | Prior Year Ended December 31 |
| 1. Book/adjusted carrying value, December 31 of prior year | 56,062,226 | 39,069,944 |
| 2. Cost of short-term investments acquired | 38,469,921 | 167,417,143 |
| 3. Accrual of discount | 38,529 | 468,152 |
| 4. Unrealized valuation increase (decrease) | | |
| 5. Total gain (loss) on disposals | (8) | 4,944 |
| 6. Deduct consideration received on disposals | 24,599,861 | 150,897,957 |
| 7. Deduct amortization of premium | | |
| 8. Total foreign exchange change in book/adjusted carrying value | | |
| 9. Deduct current year's other than temporary impairment recognized | | |
| 10. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9) | 69,970,807 | 56,062,226 |
| 11. Deduct total nonadmitted amounts | | |
| 12. Statement value at end of current period (Line 10 minus Line 11) | 69,970,807 | 56,062,226 |

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

N O N E

Schedule DB - Part B - Verification - Futures Contracts

N O N E

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

N O N E

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

N O N E

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

N O N E

SCHEDULE E - PART 2 - VERIFICATION

(Cash Equivalents)

| | 1 | 2 |
|---|--------------|---------------------------------|
| | Year To Date | Prior Year Ended December 31 |
| 1. Book/adjusted carrying value, December 31 of prior year | 49,485,532 | 21,669,593 |
| 2. Cost of cash equivalents acquired | 116,473,367 | 980,129,573 |
| 3. Accrual of discount | 30,075 | |
| 4. Unrealized valuation increase (decrease) | | 575,818 |
| 5. Total gain (loss) on disposals | 91 | 2,626 |
| 6. Deduct consideration received on disposals | 111,499,374 | 952,892,078 |
| 7. Deduct amortization of premium | | |
| 8. Total foreign exchange change in book/adjusted carrying value | | |
| 9. Deduct current year's other than temporary impairment recognized | | |
| 10. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9) | 54,489,692 | 49,485,532 |
| 11. Deduct total nonadmitted amounts | | |
| 12. Statement value at end of current period (Line 10 minus Line 11) | 54,489,692 | 49,485,532 |