

QUARTERLY STATEMENT

OF THE

MML Bay State Life Insurance Company

TO THE

Insurance Department

OF THE

STATE OF

**FOR THE QUARTER ENDED
JUNE 30, 2017**

LIFE AND ACCIDENT AND HEALTH

2017



LIFE AND ACCIDENT AND HEALTH COMPANIES - ASSOCIATION EDITION

QUARTERLY STATEMENT

AS OF JUNE 30, 2017

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

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 Sean G McCallen, 413-744-3193
(Name) (Area Code) (Telephone Number)
smccallen@MassMutual.com, 413-226-4086
(E-mail Address) (FAX Number)

OFFICERS

President and Chief Executive Officer Roger William Crandall Treasurer Todd Garrett Picken
Secretary Pia Denise Flanagan Apointed Actuary Douglas Wright Taylor

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

Pia Denise Flanagan
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 JUNE 30, 2017 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 | 313,281,168 | | 313,281,168 | 310,216,806 |
| 2. Stocks: | | | | |
| 2.1 Preferred stocks | | | | |
| 2.2 Common stocks | | | | |
| 3. Mortgage loans on real estate: | | | | |
| 3.1 First liens | 3,526,003 | | 3,526,003 | 4,007,088 |
| 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 (\$ | | | | |
| (1,750,161)), cash equivalents | | | | |
| (\$ | | | | |
| 52,027,467) and short-term | | | | |
| investments (\$ | 50,277,306 | | 50,277,306 | 62,691,625 |
|) | | | | |
| 6. Contract loans (including \$ | 94,964,458 | | 94,964,458 | 95,147,773 |
| premium notes) | | | | |
| 7. Derivatives | | | | |
| 8. Other invested assets | | | | |
| 9. Receivables for securities | | | | |
| 10. Securities lending reinvested collateral assets | | | | |
| 11. Aggregate write-ins for invested assets | | | | |
| 12. Subtotals, cash and invested assets (Lines 1 to 11) | 462,048,935 | | 462,048,935 | 472,063,292 |
| 13. Title plants less \$ | | | | |
| charged off (for Title insurers | | | | |
| only) | | | | |
| 14. Investment income due and accrued | 5,243,600 | 56,815 | 5,186,785 | 4,359,157 |
| 15. Premiums and considerations: | | | | |
| 15.1 Uncollected premiums and agents' balances in the course of collection | 609 | | 609 | 673 |
| 15.2 Deferred premiums, agents' balances and installments booked but | | | | |
| deferred and not yet due (including \$ | | | | |
| earned but unbilled premiums) | (2,679,501) | | (2,679,501) | (2,080,053) |
| 15.3 Accrued retrospective premiums (\$ | | | | |
|) and | | | | |
| contracts subject to redetermination (\$ | | | | |
|) | | | | |
| 16. Reinsurance: | | | | |
| 16.1 Amounts recoverable from reinsurers | 6,027,381 | | 6,027,381 | 2,911,681 |
| 16.2 Funds held by or deposited with reinsured companies | | | | |
| 16.3 Other amounts receivable under reinsurance contracts | 25,558,635 | | 25,558,635 | 18,471,759 |
| 17. Amounts receivable relating to uninsured plans | | | | |
| 18.1 Current federal and foreign income tax recoverable and interest thereon | 3,433,039 | | 3,433,039 | |
| 18.2 Net deferred tax asset | 18,323,249 | 11,682,834 | 6,640,415 | 6,184,602 |
| 19. Guaranty funds receivable or on deposit | 195,021 | | 195,021 | 198,623 |
| 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 | 135,194 | | 135,194 | 125,904 |
| 24. Health care (\$ | | | | |
|) and other amounts receivable | | | | |
| 25. Aggregate write-ins for other than invested assets | | | | |
| 26. Total assets excluding Separate Accounts, Segregated Accounts and | | | | |
| Protected Cell Accounts (Lines 12 to 25) | 518,286,162 | 11,739,649 | 506,546,513 | 502,235,638 |
| 27. From Separate Accounts, Segregated Accounts and Protected Cell | | | | |
| Accounts | 4,365,943,194 | | 4,365,943,194 | 4,312,051,379 |
| 28. Total (Lines 26 and 27) | 4,884,229,356 | 11,739,649 | 4,872,489,707 | 4,814,287,017 |
| 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. | | | | |
| 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) | | | | |

STATEMENT AS OF JUNE 30, 2017 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 \$139,089,812 less \$ included in Line 6.3 (including \$122,405,342 Modco Reserve) | 139,089,812 | 138,538,127 |
| 2. Aggregate reserve for accident and health contracts (including \$ Modco Reserve) | | |
| 3. Liability for deposit-type contracts (including \$ Modco Reserve)..... | 11,360,728 | 11,548,399 |
| 4. Contract claims: | | |
| 4.1 Life | 2,683,441 | 3,824,460 |
| 4.2 Accident and health | | |
| 5. Policyholders' dividends \$ and coupons \$ due and unpaid | | |
| 6. Provision for policyholders' dividends and coupons payable in following calendar year - estimated amounts: | | |
| 6.1 Dividends apportioned for payment (including \$ Modco) | | |
| 6.2 Dividends 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 | 4,229 | 2,438 |
| 9. Contract liabilities not included elsewhere: | | |
| 9.1 Surrender values on canceled contracts | | |
| 9.2 Provision for experience rating refunds, including the liability of \$ accident and health experience rating refunds of which \$ is for medical loss ratio rebate per the Public Health Service Act | 17,450,009 | 14,578,631 |
| 9.3 Other amounts payable on reinsurance, including \$ assumed and \$12,867,320 ceded | 12,867,320 | (3,421,656) |
| 9.4 Interest Maintenance Reserve | 214,431 | 289,594 |
| 10. Commissions to agents due or accrued-life and annuity contracts \$15,142 , accident and health \$ and deposit-type contract funds \$ | 15,142 | 267,320 |
| 11. Commissions and expense allowances payable on reinsurance assumed | | |
| 12. General expenses due or accrued | 13,873 | 11,640 |
| 13. Transfers to Separate Accounts due or accrued (net) (including \$(581,791) accrued for expense allowances recognized in reserves, net of reinsured allowances) | 13,390,218 | 15,996,642 |
| 14. Taxes, licenses and fees due or accrued, excluding federal income taxes | 159,313 | 199,460 |
| 15.1 Current federal and foreign income taxes, including \$ on realized capital gains (losses) | | 18,697,891 |
| 15.2 Net deferred tax liability | | |
| 16. Unearned investment income | | |
| 17. Amounts withheld or retained by company as agent or trustee | 31,792 | 16,675 |
| 18. Amounts held for agents' account, including \$ agents' credit balances | | |
| 19. Remittances and items not allocated | 457,987 | 5,895,429 |
| 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 | 4,993,911 | 4,997,495 |
| 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 | 7,492,926 | 2,310,794 |
| 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 | 2,542,098 | |
| 24.10 Payable for securities lending | | |
| 24.11 Capital notes \$ and interest thereon \$ | | |
| 25. Aggregate write-ins for liabilities | 403,538 | 187,860 |
| 26. Total liabilities excluding Separate Accounts business (Lines 1 to 25) | 213,170,768 | 213,941,199 |
| 27. From Separate Accounts Statement | 4,365,943,194 | 4,312,051,379 |
| 28. Total liabilities (Lines 26 and 27) | 4,579,113,962 | 4,525,992,578 |
| 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) | 147,138,631 | 142,057,325 |
| 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) | 290,875,545 | 285,794,239 |
| 38. Totals of Lines 29, 30 and 37 | 293,375,745 | 288,294,439 |
| 39. Totals of Lines 28 and 38 (Page 2, Line 28, Col. 3) | 4,872,489,707 | 4,814,287,017 |
| DETAILS OF WRITE-INS | | |
| 2501. Miscellaneous liabilities | 344,570 | 140,262 |
| 2502. Funds awaiting escheat | 58,968 | 47,598 |
| 2503. | | |
| 2598. Summary of remaining write-ins for Line 25 from overflow page | | |
| 2599. Totals (Lines 2501 through 2503 plus 2598)(Line 25 above) | 403,538 | 187,860 |
| 3101. | | |
| 3102. | | |
| 3103. | | |
| 3198. Summary of remaining write-ins for Line 31 from overflow page | | |
| 3199. Totals (Lines 3101 through 3103 plus 3198)(Line 31 above) | | |
| 3401. | | |
| 3402. | | |
| 3403. | | |
| 3498. Summary of remaining write-ins for Line 34 from overflow page | | |
| 3499. Totals (Lines 3401 through 3403 plus 3498)(Line 34 above) | | |

SUMMARY OF OPERATIONS

| | 1 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 | 1,874,435 | 10,188,231 | (105,853,696) |
| 2. Considerations for supplementary contracts with life contingencies | | | 65,136 |
| 3. Net investment income | 8,034,399 | 6,847,463 | 14,288,275 |
| 4. Amortization of Interest Maintenance Reserve (IMR) | 66,489 | 92,231 | 188,040 |
| 5. Separate Accounts net gain from operations excluding unrealized gains or losses | | | |
| 6. Commissions and expense allowances on reinsurance ceded | 4,050,698 | 2,857,015 | 61,254,601 |
| 7. Reserve adjustments on reinsurance ceded | (37,690,023) | (7,365,572) | 112,685,751 |
| 8. Miscellaneous Income: | | | |
| 8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts | 38,118,221 | 37,202,271 | 71,495,125 |
| 8.2 Charges and fees for deposit-type contracts | | | |
| 8.3 Aggregate write-ins for miscellaneous income | 93,335 | (348,548) | (761,293) |
| 9. Totals (Lines 1 to 8.3) | 14,547,554 | 49,473,091 | 153,361,939 |
| 10. Death benefits | 21,443,854 | 22,845,878 | 40,748,262 |
| 11. Matured endowments (excluding guaranteed annual pure endowments) | | | |
| 12. Annuity benefits | 512,562 | 1,113,394 | 3,111,803 |
| 13. Disability benefits and benefits under accident and health contracts | 139,127 | 184,197 | 364,151 |
| 14. Coupons, guaranteed annual pure endowments and similar benefits | | | |
| 15. Surrender benefits and withdrawals for life contracts | 1,589,903 | 24,787,489 | 49,389,269 |
| 16. Group conversions | | | |
| 17. Interest and adjustments on contract or deposit-type contract funds | 508,505 | 835,174 | 1,096,059 |
| 18. Payments on supplementary contracts with life contingencies | | | |
| 19. Increase in aggregate reserves for life and accident and health contracts | 551,684 | (744,836) | 1,920,099 |
| 20. Totals (Lines 10 to 19) | 24,745,635 | 49,021,296 | 96,629,643 |
| 21. Commissions on premiums, annuity considerations, and deposit-type contract funds (direct business only) | 1,570,398 | 1,538,640 | 2,935,769 |
| 22. Commissions and expense allowances on reinsurance assumed | | | |
| 23. General insurance expenses | 6,912,768 | 3,763,550 | 7,955,012 |
| 24. Insurance taxes, licenses and fees, excluding federal income taxes | 855,690 | 564,637 | 990,162 |
| 25. Increase in loading on deferred and uncollected premiums | (2,195) | (2,780) | (792) |
| 26. Net transfers to or (from) Separate Accounts net of reinsurance | (23,916,392) | (18,205,335) | (35,570,149) |
| 27. Aggregate write-ins for deductions | (1,921,867) | (161,530) | 34,553,217 |
| 28. Totals (Lines 20 to 27) | 8,244,037 | 36,518,478 | 107,492,862 |
| 29. Net gain from operations before dividends to policyholders and federal income taxes (Line 9 minus Line 28) | 6,303,517 | 12,954,613 | 45,869,077 |
| 30. Dividends to policyholders | | | |
| 31. Net gain from operations after dividends to policyholders and before federal income taxes (Line 29 minus Line 30) | 6,303,517 | 12,954,613 | 45,869,077 |
| 32. Federal and foreign income taxes incurred (excluding tax on capital gains) | (262,491) | 2,013,866 | 25,634,294 |
| 33. Net gain from operations after dividends to policyholders and federal income taxes and before realized capital gains or (losses) (Line 31 minus Line 32) | 6,566,008 | 10,940,747 | 20,234,783 |
| 34. Net realized capital gains (losses) (excluding gains (losses) transferred to the IMR) less capital gains tax of \$ (8,009) (excluding taxes of \$ (4,671) transferred to the IMR) | (37,182) | (10,393) | 20,356 |
| 35. Net income (Line 33 plus Line 34) | 6,528,826 | 10,930,354 | 20,255,139 |
| CAPITAL AND SURPLUS ACCOUNT | | | |
| 36. Capital and surplus, December 31, prior year | 288,294,439 | 231,301,005 | 231,301,005 |
| 37. Net income (Line 35) | 6,528,826 | 10,930,354 | 20,255,139 |
| 38. Change in net unrealized capital gains (losses) less capital gains tax of \$ (5,512) | (10,236) | | (19,222) |
| 39. Change in net unrealized foreign exchange capital gain (loss) | | | |
| 40. Change in net deferred income tax | (1,600,168) | (878,658) | 12,313,003 |
| 41. Change in nonadmitted assets | 1,995,890 | 1,118,519 | (9,887,929) |
| 42. Change in liability for reinsurance in unauthorized and certified companies | | | |
| 43. Change in reserve on account of change in valuation basis, (increase) or decrease | | | |
| 44. Change in asset valuation reserve | 3,584 | (20,792) | (331,185) |
| 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 | | | |
| 53. Aggregate write-ins for gains and losses in surplus | (1,836,590) | | 34,663,629 |
| 54. Net change in capital and surplus for the year (Lines 37 through 53) | 5,081,306 | 11,149,423 | 56,993,434 |
| 55. Capital and surplus, as of statement date (Lines 36 + 54) | 293,375,745 | 242,450,428 | 288,294,439 |
| DETAILS OF WRITE-INS | | | |
| 08.301. Miscellaneous | 310,033 | (64,250) | 153,600 |
| 08.302. Revenue sharing | (216,698) | (284,298) | (914,893) |
| 08.303. | | | |
| 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) | 93,335 | (348,548) | (761,293) |
| 2701. Reinsurance ceded adjustment | (1,940,454) | | 34,663,629 |
| 2702. Miscellaneous charges to operations | 18,587 | (161,530) | (110,412) |
| 2703. | | | |
| 2798. Summary of remaining write-ins for Line 27 from overflow page | | | |
| 2799. Totals (Lines 2701 through 2703 plus 2798)(Line 27 above) | (1,921,867) | (161,530) | 34,553,217 |
| 5301. Reinsurance ceded adjustment | (1,940,454) | | 34,663,629 |
| 5302. Other changes to surplus | 103,864 | | |
| 5303. | | | |
| 5398. Summary of remaining write-ins for Line 53 from overflow page | | | |
| 5399. Totals (Lines 5301 through 5303 plus 5398)(Line 53 above) | (1,836,590) | | 34,663,629 |

STATEMENT AS OF JUNE 30, 2017 OF THE MML Bay State Life Insurance Company

CASH FLOW

| | 1 Current Year To Date | 2 Prior Year To Date | 3 Prior Year Ended December 31 |
|---|------------------------------|----------------------------|--------------------------------------|
| Cash from Operations | | | |
| 1. Premiums collected net of reinsurance | 1,420,780 | 9,674,213 | (102,483,538) |
| 2. Net investment income | 6,973,842 | 6,418,613 | 13,981,424 |
| 3. Miscellaneous income | 22,090,374 | 37,177,030 | 243,146,856 |
| 4. Total (Lines 1 to 3) | 30,484,996 | 53,269,856 | 154,644,742 |
| 5. Benefit and loss related payments | 33,048,372 | 49,644,197 | 95,172,234 |
| 6. Net transfers to Separate Accounts, Segregated Accounts and Protected Cell Accounts | (14,809,969) | (19,276,357) | (35,033,623) |
| 7. Commissions, expenses paid and aggregate write-ins for deductions | 4,279,091 | 6,232,477 | 11,832,105 |
| 8. Dividends paid to policyholders | | | |
| 9. Federal and foreign income taxes paid (recovered) net of \$ 3,602 tax on capital gains (losses) | 21,851,476 | 1,760,267 | 3,948,825 |
| 10. Total (Lines 5 through 9) | 44,368,970 | 38,360,584 | 75,919,541 |
| 11. Net cash from operations (Line 4 minus Line 10) | (13,883,974) | 14,909,272 | 78,725,201 |
| Cash from Investments | | | |
| 12. Proceeds from investments sold, matured or repaid: | | | |
| 12.1 Bonds | 14,361,505 | 18,968,605 | 47,823,746 |
| 12.2 Stocks | | | |
| 12.3 Mortgage loans | 482,382 | 972,900 | 1,832,747 |
| 12.4 Real estate | | | |
| 12.5 Other invested assets | | | |
| 12.6 Net gains or (losses) on cash, cash equivalents and short-term investments | 14 | (1,154) | (156) |
| 12.7 Miscellaneous proceeds | | (4,653) | 124,096 |
| 12.8 Total investment proceeds (Lines 12.1 to 12.7) | 14,843,901 | 19,935,698 | 49,780,433 |
| 13. Cost of investments acquired (long-term only): | | | |
| 13.1 Bonds | 17,322,757 | 49,039,556 | 135,100,254 |
| 13.2 Stocks | | | |
| 13.3 Mortgage loans | 4,700 | 1,069 | 2,992 |
| 13.4 Real estate | | | |
| 13.5 Other invested assets | | | |
| 13.6 Miscellaneous applications | (2,542,098) | | |
| 13.7 Total investments acquired (Lines 13.1 to 13.6) | 14,785,359 | 49,040,625 | 135,103,246 |
| 14. Net increase (or decrease) in contract loans and premium notes | (183,315) | (1,327,640) | (458,743) |
| 15. Net cash from investments (Line 12.8 minus Line 13.7 and Line 14) | 241,857 | (27,777,287) | (84,864,070) |
| 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 | (351,057) | 1,447,259 | 1,386,252 |
| 16.5 Dividends to stockholders | | | |
| 16.6 Other cash provided (applied) | 1,578,855 | 323,087 | 6,154,814 |
| 17. Net cash from financing and miscellaneous sources (Line 16.1 through Line 16.4 minus Line 16.5 plus Line 16.6) | 1,227,798 | 1,770,346 | 7,541,066 |
| 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) | (12,414,319) | (11,097,669) | 1,402,197 |
| 19. Cash, cash equivalents and short-term investments: | | | |
| 19.1 Beginning of year | 62,691,625 | 61,289,428 | 61,289,428 |
| 19.2 End of period (Line 18 plus Line 19.1) | 50,277,306 | 50,191,759 | 62,691,625 |

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

| | | | |
|---|-----------|---------|---------|
| 20.0001. Bond conversions and refinancing | 1,589,935 | 500,000 | 942,855 |
| 20.0002. Interest capitalization for long-term debt | | | 312 |

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 | 18,166,169 | 18,972,443 | 37,389,376 |
| 3. Ordinary individual annuities | 37,589 | 15,230 | 21,760 |
| 4. Credit life (group and individual) | | | |
| 5. Group life insurance | (2,833,923) | (4,555,474) | (3,372,447) |
| 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 | 15,369,835 | 14,432,199 | 34,038,689 |
| 12. Deposit-type contracts | | | |
| 13. Total | 15,369,835 | 14,432,199 | 34,038,689 |
| 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) | | | |

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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 (the 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 | 2017 | 2016 |
|---|--------|-------------|-------------|-----------------------|-----------------------|
| NET INCOME | | | | | |
| (1) State basis (Page 4, Line 35, Columns 1 & 3) | XXX | XXX | XXX | \$ 6,528,826 | \$ 20,255,139 |
| (2) State prescribed practices that increase/(decrease) NAIC SAP: | N/A | N/A | N/A | - | - |
| (3) State permitted practices that increase/(decrease) NAIC SAP: | N/A | N/A | N/A | - | - |
| (4) NAIC SAP (1-2-3=4) | XXX | XXX | XXX | <u>\$ 6,528,826</u> | <u>\$ 20,255,139</u> |
| SURPLUS | | | | | |
| (5) State basis (Page 3, Line 38, Columns 1 & 2) | XXX | XXX | XXX | \$ 293,375,745 | \$ 288,294,439 |
| (6) State prescribed practices that increase/(decrease) NAIC SAP: | N/A | N/A | N/A | - | - |
| (7) State permitted practices that increase/(decrease) NAIC SAP: | N/A | N/A | N/A | - | - |
| (8) NAIC SAP (5-6-7=8) | XXX | XXX | XXX | <u>\$ 293,375,745</u> | <u>\$ 288,294,439</u> |

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

c. Accounting policy:

(1-5) No change

(6) For loan-backed and structured securities, such as asset-backed securities, mortgage-backed securities, including residential mortgage-backed securities and commercial mortgage-backed securities, 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 - No change

Note 2 – Accounting Changes and Corrections of Errors

a. For the six months ended June 30, 2017 and 2016, the Company did not record any corrections of prior year errors.

Certain prior year amounts within these financial statements have been reclassified to conform to the current year presentation.

b. Adoption of new accounting standards

NOTES TO FINANCIAL STATEMENTS

In June 2016, the NAIC adopted modifications to SSAP No. 26, Bonds, Excluding Loan-backed and Structured Securities, and SSAP No. 43R, Loan-backed and Structured Securities, which were effective January 1, 2017 and should be prospectively applied. These modifications clarified that the amount of prepayment penalties or acceleration fees reported as investment income should equal the total proceeds received less the par value of the investment; and any difference between the carrying value and the par value at the time of disposal will be reported as realized capital gains and losses. These modifications also added specific disclosures related to securities sold, redeemed or otherwise disposed of as a result of a callable feature. These modifications did not have a significant impact on the Company's financial statements.

In June 2016, the NAIC adopted substantive revisions to SSAP No. 51, Life Contracts, to incorporate references to the Valuation Manual (VM) and to facilitate the implementation of PBR, which were effective on January 1, 2017. The adoption of PBR only applies to new life insurance policies issued after January 1, 2017, however the Company plans to adopt these revisions to SSAP No.51 using the 3-year phased in approach by no later than January 1, 2020. The Company currently uses formulas and assumptions to determine reserves as prescribed by state laws and regulations. Under PBR, the Company will be required to hold the higher of (a) the reserve using prescribed factors and (b) the PBR reserve which considers a wide range of future economic conditions, computed using justified company experience factors, such as mortality, policyholder behavior and expenses. The Company is currently assessing the impact of these modifications on the Company's financial statements.

In August 2016, the NAIC adopted modifications to SSAP No. 51, Life Contracts, which were effective January 1, 2017. These modifications clarified that annual assumption changes from reserving methods used in principles-based reserving (PBR) would not qualify as a change in valuation basis. Changes in valuation basis are recorded directly to surplus instead of through income. These modifications were made to accommodate PBR which became effective January 1, 2017. These modifications did not have an impact on the Company's financial statements.

In June 2017, the NAIC adopted modifications to SSAP No. 30, Investment in Common Stock, SSAP No. 48, Joint Ventures, Partnerships and Limited Liability Method of Accounting, and SSAP No. 97, Investments in Subsidiary Controlled and Affiliated Entities as they relate to ASU 2016-07, Simplifying the Transition to the Equity Method of Accounting which were effective January 1, 2017. These modifications included the definition of control and provided guidance as to when an investment qualified (or no longer qualifies) for the equity method of accounting. These modifications further specified that when the level of investment in a subsidiary, controlled or affiliated (SCA) entity fell below the level of control, defined as the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of the investee in SSAP No. 97, the reporting entity should discontinue the use of the equity method of accounting. When an entity becomes qualified to use the equity method of accounting, the entity should add the cost of acquiring the additional interest in the investee to the current basis of the previously held interest and apply the equity method of accounting, prospectively. The Company has adopted these modifications.

Note 3 – Business Combinations and Goodwill - No change

Note 4 – Discontinued Operations - No change

Note 5 – Investments

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

NOTES TO FINANCIAL STATEMENTS

d. Loan-backed and structured securities:

- (1) Prepayment assumptions for loan-backed and structured securities are based on various assumptions and inputs obtained from external industry sources along with internal analysis and actual experience.
- (2) The following contains loan-backed and structured securities that recognized 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 | | 94,424 | - | 41,274 | 53,150 | |
| c. Total first quarter | \$ | 94,424 | \$ | - | \$ | 41,274 |
| | | | | | \$ | 53,150 |

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 | | 342 | - | 76 | 266 | |
| f. Total second quarter | \$ | 342 | \$ | - | \$ | 76 |
| | | | | | \$ | 266 |

OTTI recognized in the third quarter

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

OTTI recognized in the fourth quarter

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

m. Annual aggregate total

| | | | |
|----|---|----|--------|
| \$ | - | \$ | 41,350 |
|----|---|----|--------|

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 following is a CUSIP detail list of 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 |
|-----------|----------------------------|---------------------|-----------------|---------------------------|----------------------------|---|
| 22541QJR4 | \$ 7,034.17 | \$ 33.78 | \$ (7,000.39) | \$ 33.78 | \$ 4,334.02 | March 31, 2017 |
| 86358RA23 | 87,389.56 | 53,115.66 | (34,273.90) | 53,115.66 | 84,944.86 | March 31, 2017 |
| 86358RLG0 | 342.38 | 266.85 | (75.53) | 266.85 | 2,967.48 | June 30, 2017 |
| Totals | \$ 94,766.11 | \$ 53,416.29 | \$ (41,349.82) | \$ 53,416.29 | \$ 92,246.36 | |

- (4) As of June 30, 2017, 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 | \$ | (1,166,292) |
| 2. 12 months or longer | \$ | (225,249) |
| b. The aggregate related fair value of securities with unrealized losses: | | |
| 1. Less than 12 months | \$ | 51,040,708 |
| 2. 12 months or longer | \$ | 5,928,615 |

- (5) No change

e. Repurchase agreements:

- (1-2) No change

- (3) The Company does not have any securities lending transactions administered by an affiliated agent.

- (4-6) No change

NOTES TO FINANCIAL STATEMENTS

- f. The Company does not have any investments in real estate.
- g. Low income housing tax credit properties - No change
- h. Restricted assets - No change
- i. Working capital finance investments: The Company did not invest in working capital finance investments.
- j. 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.
- k. Structured notes:
A structured note is a direct debt issuance by a corporation, municipality, or government entity, ranking pari-passu with the issuer's other debt issuance of equal seniority where either: (a) the coupon and/or principal payments are linked, in whole or in part, to prices or payment streams from index or indices, or assets deriving their value from other than the issuer's credit quality, or (b) the coupon and/or principal payments are leveraged by a formula that is different from either a fixed coupon, or a non-leveraged floating rate coupon linked to an interest rate index, including but not limited to the London Interbank Offered Rate (LIBOR) or the prime rate. As structured notes are issuer obligations without a trust, they are within the scope of SSAP No. 26, "Bonds, Excluding Loan-backed and Structured Securities" (SSAP No. 26). Structured notes are different than the asset backed structured securities, which are accounted for under SSAP No. 43R, "Revised - Loan-Backed and Structured Securities" (SSAP No. 43R), as they lack either a trust or assets backing them. The disclosure below allows regulators to assess the volume of activity in structured notes and to determine whether additional accounting or reporting revisions, such as valuation and risk-based capital, are needed. To satisfy this request, the Company is required to separately identify structured notes, on a CUSIP basis and provide information by CUSIP for actual cost, fair value, book/adjusted carrying value, and whether the structured note is a mortgage-referenced security. The following sets forth the actual cost, fair value and carrying value of structured notes as of June 30, 2017:

| CUSIP Identification | Actual Cost | Fair Value | Book / Adjusted Carrying Value | Mortgage-Referenced Security (YES/NO) |
|----------------------|-------------|------------|--------------------------------|---------------------------------------|
| 391164AF7 | \$ 526,870 | \$ 520,044 | \$ 516,589 | NO |

- l. 5* Securities - No change

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

Note 7 – Investment Income – No change

Note 8 – Derivative Instruments - No change

Note 9 – Income Taxes – No change

Note 10 – Information Concerning Parent, Subsidiaries and Affiliates

- a-l. 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-j. No change

Note 13 – Capital and Surplus, Shareholders' Dividend Restrictions and Quasi-Reorganizations - No change

Note 14 – Liabilities, Contingencies and Assessments

- a. Contingent commitments – No change
- b. Assessments - No change
- c. Gain contingencies - No change
- d. Claims related to extra contractual obligations - No change

NOTES TO FINANCIAL STATEMENTS

e. All other contingencies:

The Company is involved in litigation arising in the normal course of business, which seeks compensatory damages, punitive damages and equitable remedies. Although the Company is not aware of any actions or allegations that reasonably should give rise to a material adverse impact to the Company's financial position or liquidity, the outcome of litigation cannot be foreseen with certainty. It is the opinion of management that the ultimate resolution of these matters will not materially impact the Company's financial position or liquidity. However, the outcome of a particular proceeding may be material to the Company's results of operations for a particular period depending upon, among other factors, the size of the loss and the level of the Company's results of operations for the period.

f. Regulatory matters:

The Company is subject to governmental and administrative proceedings and regulatory inquiries, examinations and investigations in the ordinary course of its business. In connection with regulatory inquiries, examinations and investigations, the Company has been contacted by various regulatory agencies including, among others, the Securities and Exchange Commission, the U.S. Department of Labor and various state insurance departments and state attorneys general. The Company has cooperated fully with these regulatory agencies with regard to their inquiries, examinations and investigations and has responded to information requests and comments.

Market volatility in the financial services industry over the last several years has contributed to increased scrutiny of the entire financial services industry. Therefore, the Company believes that it is reasonable to expect that proceedings, regulatory inquiries, examinations and investigations into the insurance and financial services industries will continue for the foreseeable future. Additionally, new industry-wide legislation, rules and regulations could significantly affect the insurance and financial services industries as a whole. It is the opinion of management that the ultimate resolution of these regulatory inquiries, examinations, investigations, legislative and regulatory changes of which we are aware will not materially impact the Company's financial position or liquidity. However, the outcome of a particular matter may be material to the Company's operating results for a particular period depending upon, among other factors, the financial impact of the matter and the level of the Company's results of operations for the period.

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 2017 or 2016.

(3) No change

(4) The Company did not have interests that continue to be held by a transferor in securitized financial assets in 2017 or 2016.

(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 through the first quarter ended June 30, 2017 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.

NOTES TO FINANCIAL STATEMENTS

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

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

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

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

| | June 30, 2017 | | | |
|--|-----------------------|-------------------------|-------------|-------------------------|
| | Level 1 | Level 2 | Level 3 | Total |
| Financial assets: | | | | |
| Bonds: | | | | |
| Parent, subsidiaries and affiliates | \$ - | \$ 483,680 | \$ - | \$ 483,680 |
| Separate account assets ⁽¹⁾ | 979,189,366 | 2,287,575,613 | - | 3,266,764,979 |
| Total financial assets carried at fair value | <u>\$ 979,189,366</u> | <u>\$ 2,288,059,293</u> | <u>\$ -</u> | <u>\$ 3,267,248,659</u> |

⁽¹⁾\$1,099,178,215 of book value separate account assets are not carried at fair value and, therefore, are not included in this table.

For the period ended June 30, 2017, there were no significant transfers between Level 1 and Level 2.

| | December 31, 2016 | | | |
|--|-----------------------|-------------------------|-------------|-------------------------|
| | Level 1 | Level 2 | Level 3 | Total |
| Financial assets: | | | | |
| Bonds: | | | | |
| Parent, subsidiaries and affiliates | \$ - | \$ 524,103 | \$ - | \$ 524,103 |
| Separate account assets ⁽¹⁾ | 922,485,384 | 2,302,419,763 | - | 3,224,905,147 |
| Total financial assets carried at fair value | <u>\$ 922,485,384</u> | <u>\$ 2,302,943,866</u> | <u>\$ -</u> | <u>\$ 3,225,429,250</u> |

⁽¹⁾\$1,087,146,232 of book value separate account assets are not carried at fair value and, therefore, are not included in this table.

For the year ended December 31, 2016, there were no significant transfers between Level 1 and Level 2.

- The Company does not have any Level 3 financial instruments that are carried at fair value.
- 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.
- 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:

NOTES TO FINANCIAL STATEMENTS

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 issues that incorporate the credit quality and industry sector of the issuer. This level also includes securities priced by independent pricing services that use observable inputs. Valuations based on matrix pricing or other similar techniques that utilize significant unobservable inputs or inputs that cannot be derived principally from, or corroborated by, observable market data, including adjustments for illiquidity, delta spread adjustments or spreads to reflect industry trends or specific credit-related issues are classified as Level 3. In addition, inputs including quoted prices for identical or similar securities that are less liquid and based on lower levels of trading activity than securities classified in Level 2 are classified as Level 3.

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

Derivative assets and liabilities - These financial instruments are primarily valued using the market approach. The estimated fair value of derivatives is based primarily on quotations obtained from counterparties and independent sources, such as quoted market values received from brokers. These quotations are compared to internally derived prices and a price challenge is lodged with the counterparties and an independent source when a significant difference cannot be explained by appropriate adjustments to the internal model. When quoted market values are not reliable or available, the value is based upon an internal valuation process using market observable inputs that other market participants would use. Significant inputs to the valuation of derivative financial instruments include, overnight index swaps and LIBOR basis curves, interest rate volatility, swap yield curve, currency spot rates, cross currency basis curves and dividend yields. Due to the observability of the significant inputs to these fair value measurements, they are classified as Level 2.

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:

| June 30, 2017 | | | | | | |
|--|-------------------------|--------------------|-------------|---------------|------------|---|
| | Aggregate Fair Value | Admitted Assets | Level 1 | Level 2 | Level 3 | Not Practicable (Carrying Value) |
| Financial assets: | | | | | | |
| Bonds: | | | | | | |
| U. S. government and agencies | \$ 39,497,637 | \$ 39,547,737 | - | \$ 39,497,637 | - | - |
| Special revenue | 68,237 | 61,144 | - | 68,237 | - | - |
| Industrial and miscellaneous | 271,743,514 | 267,308,736 | - | 269,297,068 | 2,446,446 | - |
| Parent, subsidiaries and affiliates | 6,424,216 | 6,363,551 | - | 6,424,216 | - | - |
| Mortgage loans - residential | 3,449,399 | 3,526,003 | - | - | 3,449,399 | - |
| Cash, cash equivalents and short-term investments | 50,277,306 | 50,277,306 | (1,750,161) | 52,027,467 | - | - |
| Separate account assets | 4,382,692,610 | 4,365,943,194 | 979,189,366 | 3,388,380,833 | 15,122,411 | - |
| Financial liabilities: | | | | | | |
| Individual annuity contracts | 2,268,092 | 3,006,216 | - | - | 2,268,092 | - |
| Supplementary contracts | 11,360,313 | 11,247,834 | - | - | 11,360,313 | - |
| December 31, 2016 | | | | | | |
| | Aggregate Fair Value | Admitted Assets | Level 1 | Level 2 | Level 3 | Not Practicable (Carrying Value) |
| Financial assets: | | | | | | |
| Bonds: | | | | | | |
| U. S. government and agencies | \$ 39,216,346 | \$ 39,357,823 | - | \$ 39,216,346 | - | - |
| Special revenue | 72,640 | 66,143 | - | 72,640 | - | - |
| Industrial and miscellaneous | 266,229,273 | 264,388,709 | - | 252,459,408 | 13,769,865 | - |
| Parent, subsidiaries and affiliates | 6,442,873 | 6,404,131 | - | 6,442,873 | - | - |
| Mortgage loans - residential | 3,921,346 | 4,007,088 | - | - | 3,921,346 | - |
| Cash, cash equivalents and short-term investments | 62,691,625 | 62,691,625 | (2,302,765) | 64,994,390 | - | - |
| Separate account assets | 4,320,299,668 | 4,312,051,379 | 923,105,179 | 3,381,127,144 | 16,067,345 | - |
| Financial liabilities: | | | | | | |
| Individual annuity contracts | 2,225,733 | 3,061,780 | - | - | 2,225,733 | - |
| Supplementary contracts | 11,538,373 | 11,424,132 | - | - | 11,538,373 | - |

- d. As of June 30, 2017 and December 31, 2016, the Company had no investments where it was not practicable to estimate fair value.

NOTES TO FINANCIAL STATEMENTS

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 2015 Annual Statement.

Insurance and underwriting risks

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

Investment and interest rate risks

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

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

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

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

Credit and other market risks

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

Stressed conditions, volatility and disruptions in capital markets or financial asset classes can have an adverse effect on the Company, in part because the Company has a large investment portfolio and assets supporting the Company's insurance liabilities are sensitive to changing market factors. Market factors, including interest rates, credit spread quality, 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.

Political Uncertainties

Political events, such as the ongoing volatility with respect to the European Union, may trigger or exacerbate 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 us to utilize the mitigating actions described above to attempt to reduce the potential impact of each underlying risk factor on the Company.

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

NOTES TO FINANCIAL STATEMENTS

- (3) The actual cost reduced by paydowns, carrying value, fair value and related gross realized losses from OTTI of the Company's investments with significant Alt-A and subprime exposure were as follows:

| | June 30, 2017 | | | Six Months Ended June 30, 2017 |
|--|---------------------|---------------------|---------------------|-----------------------------------|
| | Actual Cost | Carrying Value | Fair Value | OTTI |
| Alt-A: | | | | |
| a. Residential mortgage-backed securities | \$ 1,128,496 | \$ 1,162,734 | \$ 1,416,517 | \$ 7,000 |
| b. Commercial mortgage-backed securities | - | - | - | - |
| c. Collateralized debt obligations | - | - | - | - |
| d. Structured securities | - | - | - | - |
| e. Equity investments in subsidiary and controlled affiliates | - | - | - | - |
| f. Other assets | - | - | - | - |
| g. Total | <u>\$ 1,128,496</u> | <u>\$ 1,162,734</u> | <u>\$ 1,416,517</u> | <u>\$ 7,000</u> |

| | June 30, 2017 | | | Six Months Ended June 30, 2017 |
|--|---------------------|---------------------|---------------------|-----------------------------------|
| | Actual Cost | Carrying Value | Fair Value | OTTI |
| Subprime: | | | | |
| a. Residential mortgage-backed securities | \$ 1,355,072 | \$ 1,694,106 | \$ 2,105,160 | \$ - |
| b. Commercial mortgage-backed securities | - | - | - | - |
| c. Collateralized debt obligations | - | - | - | - |
| d. Structured securities | - | - | - | - |
| e. Equity investments in subsidiary and controlled affiliates | - | - | - | - |
| f. Other assets | - | - | - | - |
| g. Total | <u>\$ 1,355,072</u> | <u>\$ 1,694,106</u> | <u>\$ 2,105,160</u> | <u>\$ -</u> |

| | December 31, 2016 | | | Year Ended December 31, 2016 |
|--|---------------------|---------------------|---------------------|---------------------------------|
| | Actual Cost | Carrying Value | Fair Value | OTTI |
| Alt-A: | | | | |
| a. Residential mortgage-backed securities | \$ 2,025,204 | \$ 1,322,448 | \$ 1,746,541 | \$ 19 |
| b. Commercial mortgage-backed securities | - | - | - | - |
| c. Collateralized debt obligations | - | - | - | - |
| d. Structured securities | - | - | - | - |
| e. Equity investments in subsidiary and controlled affiliates | - | - | - | - |
| f. Other assets | - | - | - | - |
| g. Total | <u>\$ 2,025,204</u> | <u>\$ 1,322,448</u> | <u>\$ 1,746,541</u> | <u>\$ 19</u> |

| | December 31, 2016 | | | Year Ended December 31, 2016 |
|--|---------------------|---------------------|---------------------|---------------------------------|
| | Actual Cost | Carrying Value | Fair Value | OTTI |
| Subprime: | | | | |
| a. Residential mortgage-backed securities | \$ 3,193,121 | \$ 1,803,842 | \$ 2,235,591 | \$ 6,452 |
| b. Commercial mortgage-backed securities | - | - | - | - |
| c. Collateralized debt obligations | - | - | - | - |
| d. Structured securities | - | - | - | - |
| e. Equity investments in subsidiary and controlled affiliates | - | - | - | - |
| f. Other assets | - | - | - | - |
| g. Total | <u>\$ 3,193,121</u> | <u>\$ 1,803,842</u> | <u>\$ 2,235,591</u> | <u>\$ 6,452</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 August 10, 2017, the date the financial statements were available to be issued. No events have occurred subsequent to the date of the statement of financial position and before the date of evaluation that would require disclosure.

Note 23 – Reinsurance - No change

NOTES TO FINANCIAL STATEMENTS

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 - No change

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 – Premium and Annuity Considerations Deferred and Uncollected - No change

Note 34 – Separate Accounts - No change

Note 35 – 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.
- 4.1 Has the reporting entity been a party to a merger or consolidation during the period covered by this statement? Yes [] No [X]
- 4.2 If yes, provide the name of the entity, NAIC Company Code, and state of domicile (use two letter state abbreviation) for any entity that has ceased to exist as a result of the merger or consolidation.

| 1 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. 12/31/2014
- 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?
State of Connecticut Insurance Department.
- 6.5 Have all financial statement adjustments within the latest financial examination report been accounted for in a subsequent financial statement filed with Departments? Yes [] No [] N/A [X]
- 6.6 Have all of the recommendations within the latest financial examination report been complied with? Yes [X] No [] N/A []
- 7.1 Has this reporting entity had any Certificates of Authority, licenses or registrations (including corporate registration, if applicable) suspended or revoked by any governmental entity during the reporting period? Yes [] No [X]
- 7.2 If yes, give full information:
- 8.1 Is the company a subsidiary of a bank holding company regulated by the Federal Reserve Board? Yes [] No [X]
- 8.2 If response to 8.1 is yes, please identify the name of the bank holding company.
- 8.3 Is the company affiliated with one or more banks, thrifts or securities firms? Yes [X] No []
- 8.4 If response to 8.3 is yes, please provide below the names and location (city and state of the main office) of any affiliates regulated by a federal regulatory services agency [i.e. the Federal Reserve Board (FRB), the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC) and the Securities Exchange Commission (SEC)] and identify the affiliate's primary federal regulator.

| 1 Affiliate Name | 2 Location (City, State) | 3 FRB | 4 OCC | 5 FDIC | 6 SEC |
|---|-----------------------------|----------|----------|-----------|----------|
| Baring International Investment Limited | London, UK | | | | YES. |
| Barings Securities, LLC | Boston, MA | | | | YES. |
| MML Distributors, LLC | Enfield, CT | | | | 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. |
| OppenheimerFunds Distributor, Inc. | New York, NY | | | | YES. |
| The MassMutual Trust Company, FSB | Enfield, CT | | YES | | |

GENERAL INTERROGATORIES

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

FINANCIAL

- 10.1 Does the reporting entity report any amounts due from parent, subsidiaries or affiliates on Page 2 of this statement? Yes No
- 10.2 If yes, indicate any amounts receivable from parent included in the Page 2 amount: \$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
- 11.2 If yes, give full and complete information relating thereto:

12. Amount of real estate and mortgages held in other invested assets in Schedule BA: \$
13. Amount of real estate and mortgages held in short-term investments: \$
- 14.1 Does the reporting entity have any investments in parent, subsidiaries and affiliates? Yes No
- 14.2 If yes, please complete the following:

| | 1 Prior Year-End Book/Adjusted Carrying Value | 2 Current Quarter Book/Adjusted Carrying Value |
|---|--|---|
| 14.21 Bonds | \$ 6,404,131 | \$ 5,879,871 |
| 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) | \$ 6,404,131 | \$ 5,879,871 |
| 14.28 Total Investment in Parent included in Lines 14.21 to 14.26 above | \$ | \$ |

- 15.1 Has the reporting entity entered into any hedging transactions reported on Schedule DB? Yes No
- 15.2 If yes, has a comprehensive description of the hedging program been made available to the domiciliary state? Yes No
 If no, attach a description with this statement.

STATEMENT AS OF JUNE 30, 2017 OF THE MML Bay State Life Insurance Company
GENERAL INTERROGATORIES

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\$

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 assets? Yes [] No []

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

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

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

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

- 18.2 If no, list exceptions:

GENERAL INTERROGATORIES

PART 2 - LIFE & HEALTH

| | | |
|------|--|------------------|
| 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 | \$ 3,526,003 |
| 1.13 | Commercial Mortgages | \$ |
| 1.14 | Total Mortgages in Good Standing | \$ 3,526,003 |
| 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) | \$ 3,526,003 |
| 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 | \$ |

STATEMENT AS OF JUNE 30, 2017 OF THE MML Bay State Life Insurance Company

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 Jurisdiction | 6 Type of Reinsurer Contract | 7 Type of Reinsurer | 8 Certified Reinsurer Rating (1 through 6) | 9 Effective Date of Certified Reinsurer Rating |
|------------------------------|-------------------|------------------------|------------------------|--|-------------------|---------------------------------------|------------------------|--|---|
| NONE | | | | | | | | | |

STATEMENT AS OF JUNE 30, 2017 OF THE MML Bay State Life Insurance Company
SCHEDULE T - PREMIUMS AND ANNUITY CONSIDERATIONS

Current Year To Date - Allocated by States and Territories

| 1 | Direct Business Only | | | | | | |
|--|----------------------|-----|------------|--------|---|------------|-------------------------|
| | 2 | 3 | 4 | 5 | 6 | 7 | |
| Life Contracts | | | | | | | Life Insurance Premiums |
| States, Etc. | Active Status | | | | | | |
| 1. Alabama | AL | L | 115,422 | | | 115,422 | |
| 2. Alaska | AK | L | 8,196 | | | 8,196 | |
| 3. Arizona | AZ | L | 408,238 | | | 408,238 | |
| 4. Arkansas | AR | L | 33,984 | | | 33,984 | |
| 5. California | CA | L | 2,050,655 | | | 2,050,655 | |
| 6. Colorado | CO | L | 349,872 | | | 349,872 | |
| 7. Connecticut | CT | L | 335,412 | | | 335,412 | |
| 8. Delaware | DE | L | 48,068 | | | 48,068 | |
| 9. District of Columbia | DC | L | 235,503 | | | 235,503 | |
| 10. Florida | FL | L | 1,116,039 | | | 1,116,039 | |
| 11. Georgia | GA | L | 330,085 | | | 330,085 | |
| 12. Hawaii | HI | L | 113,047 | | | 113,047 | |
| 13. Idaho | ID | L | 31,196 | | | 31,196 | |
| 14. Illinois | IL | L | 666,840 | | | 666,840 | |
| 15. Indiana | IN | L | 312,430 | | | 312,430 | |
| 16. Iowa | IA | L | 319,897 | 900 | | 320,797 | |
| 17. Kansas | KS | L | 156,951 | | | 156,951 | |
| 18. Kentucky | KY | L | 140,005 | | | 140,005 | |
| 19. Louisiana | LA | L | 156,376 | | | 156,376 | |
| 20. Maine | ME | L | 84,899 | | | 84,899 | |
| 21. Maryland | MD | L | 560,574 | 630 | | 561,204 | |
| 22. Massachusetts | MA | L | 434,637 | | | 434,637 | |
| 23. Michigan | MI | L | 1,027,372 | 5,250 | | 1,032,622 | |
| 24. Minnesota | MN | L | 224,545 | | | 224,545 | |
| 25. Mississippi | MS | L | 114,121 | | | 114,121 | |
| 26. Missouri | MO | L | 269,536 | | | 269,536 | |
| 27. Montana | MT | L | 163,044 | | | 163,044 | |
| 28. Nebraska | NE | L | 188,550 | 7,400 | | 195,950 | |
| 29. Nevada | NV | L | 164,190 | | | 164,190 | |
| 30. New Hampshire | NH | L | 92,284 | | | 92,284 | |
| 31. New Jersey | NJ | L | 749,912 | | | 749,912 | |
| 32. New Mexico | NM | L | 44,049 | | | 44,049 | |
| 33. New York | NY | N | 86,499 | | | 86,499 | |
| 34. North Carolina | NC | L | 550,056 | | | 550,056 | |
| 35. North Dakota | ND | L | 3,657 | | | 3,657 | |
| 36. Ohio | OH | L | 662,658 | 22,809 | | 685,467 | |
| 37. Oklahoma | OK | L | 528,884 | | | 528,884 | |
| 38. Oregon | OR | L | 182,089 | | | 182,089 | |
| 39. Pennsylvania | PA | L | 979,538 | | | 979,538 | |
| 40. Rhode Island | RI | L | 71,844 | | | 71,844 | |
| 41. South Carolina | SC | L | 329,515 | | | 329,515 | |
| 42. South Dakota | SD | L | 21,359 | | | 21,359 | |
| 43. Tennessee | TN | L | 320,288 | | | 320,288 | |
| 44. Texas | TX | L | 1,544,669 | | | 1,544,669 | |
| 45. Utah | UT | L | 161,798 | | | 161,798 | |
| 46. Vermont | VT | L | 53,380 | 600 | | 53,980 | |
| 47. Virginia | VA | L | 745,010 | | | 745,010 | |
| 48. Washington | WA | L | 348,189 | | | 348,189 | |
| 49. West Virginia | WV | L | 88,830 | | | 88,830 | |
| 50. Wisconsin | WI | L | 291,975 | | | 291,975 | |
| 51. Wyoming | WY | L | 10,466 | | | 10,466 | |
| 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 | | | | | |
| 58. Aggregate Other Aliens | OT | XXX | 31,772 | | | 31,772 | |
| 59. Subtotal | (a) | 50 | 18,058,405 | 37,589 | | 18,095,994 | |
| 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 | 165,727 | | | 165,727 | |
| 94. Aggregate or other amounts not allocable by State | | XXX | | | | | |
| 95. Totals (Direct Business) | | XXX | 18,224,132 | 37,589 | | 18,261,721 | |
| 96. Plus Reinsurance Assumed | | XXX | | | | | |
| 97. Totals (All Business) | | XXX | 18,224,132 | 37,589 | | 18,261,721 | |
| 98. Less Reinsurance Ceded | | XXX | 16,840,941 | | | 16,840,941 | |
| 99. Totals (All Business) less Reinsurance Ceded | | XXX | 1,383,191 | 37,589 | | 1,420,780 | |
| DETAILS OF WRITE-INS | | | | | | | |
| 58001. ZZZ Other Alien | | XXX | 31,772 | | | 31,772 | |
| 58002. | | XXX | | | | | |
| 58003. | | XXX | | | | | |
| 58998. Summary of remaining write-ins for Line 58 from overflow page | | XXX | | | | | |
| 58999. Totals (Lines 58001 through 58003 plus 58998)(Line 58 above) | | XXX | 31,772 | | | 31,772 | |
| 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 | | | | | |

(L) Licensed or Chartered - Licensed Insurance Carrier or Domiciled RRG; (R) Registered - Non-domiciled RRGs; (Q) Qualified - Qualified or Accredited Reinsurer; (E) Eligible - Reporting Entities eligible or approved to write Surplus Lines in the state; (N) None of the above - Not allowed to write business in the state.

(a) Insert the number of L responses except for Canada and Other Alien.

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, LLC | 06-1041383 | | Delaware |
| CML Mezzanine Investor L, LLC | 06-1041383 | | Delaware |
| CML Mezzanine Investor III, LLC | 06-1041383 | | Delaware |
| CML Special Situations Investor LLC | None | | Delaware |
| MML Mezzanine Investor L, LLC | 04-1590850 | | Delaware |
| Berkshire Way LLC | 04-1590850 | | Delaware |
| MML Special Situations Investor LLC | None | | Delaware |
| Timberland Forest Holding LLC | 47-5322979 | | Delaware |
| Lyme Adirondack Forest Company, LLC | None | | Delaware |
| Lyme Adirondack Timber Sales, Inc. | 20-5305426 | | New York |
| Lyme Adirondack Timberlands I, LLC | None | | Delaware |
| Lyme Adirondack Timberlands II, LLC | None | | Delaware |
| WP-SC, LLC* | 26-4441097 | | Delaware |
| MSP-SC, LLC | 04-1590850 | | Delaware |
| Country Club Office Plaza LLC* | 27-1435692 | | Delaware |
| Insurance Road LLC | 04-1590850 | | Delaware |
| MassMutual Trad Private Equity LLC | 04-1590850 | | Delaware |
| MassMutual Intellectual Property LLC | 04-1590850 | | Delaware |
| Invicta Advisors LLC | 56-2574604 | | Delaware |
| Jefferies Finance LLC* | 27-0105644 | | Delaware |
| Apex Credit Partners LLC | None | | Delaware |
| JFIN Fund V 2017 LLC | None | | Delaware |
| JFIN Fund III LLC | None | | Delaware |
| JFIN Asset Management LLC | None | | Delaware |
| JFAM GP LLC | None | | Delaware |
| JFAM GP LP | None | | Delaware |
| JFAM Loan Fund, LP | None | | Delaware |
| JFIN Co-Issuer Corporation | None | | Delaware |
| JFIN Europe GP, S.a.r.l. | None | | Luxembourg |
| Jefferies Finance Europe, SCSp | None | | Luxembourg |
| Jefferies Finance Business Credit LLC | None | | Delaware |
| JFIN Business Credit Fund I LLC | None | | Delaware |
| JFIN High Yield Investments LLC | None | | Delaware |
| JFIN LC Fund LLC | None | | Delaware |
| JFIN Revolver CLO Holdings LLC | None | | Delaware |
| JFIN CLO 2007 Ltd. | 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> |
|---|-----------------------|---------------------|--------------------------|
| 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 MM CLO 2014 Ltd.* | None | | Cayman Islands |
| JFIN CLO 2015 Ltd.* | None | | Cayman Islands |
| JFIN CLO 2015-II Ltd.* | None | | Cayman Islands |
| JFIN Revolver CLO Ltd. | None | | Cayman Islands |
| JFIN Revolver CLO 2014 Ltd. | None | | Cayman Islands |
| JFIN Revolver CLO 2015 Ltd. | None | | Cayman Islands |
| JFIN Revolver CLO 2015-II Ltd. | None | | Cayman Islands |
| JFIN Revolver CLO 2017 Ltd. | None | | Cayman Islands |
| JFIN CLO 2016 Ltd. | None | | Cayman Islands |
| JFIN CLO 2017 Ltd | None | | Cayman Islands |
| MassMutual Retirement Services, LLC | 04-1590850 | | Delaware |
| MML Distributors LLC* | 04-3356880 | | Massachusetts |
| MML Investment Advisers, LLC | None | | Delaware |
| MML Mezzanine Investor, LLC | 04-1590850 | | Delaware |
| MML Strategic Distributors, LLC | 46-3238013 | | Delaware |
| The MassMutual Trust Company, FSB | 06-1563535 | | Connecticut |
| MMC Equipment Finance LLC | 04-1590850 | | Delaware |
| MassMutual Asset Finance LLC* | 26-0073611 | | Delaware |
| MMAF Equipment Finance LLC 2009-A | 27-1379258 | | Delaware |
| MMAF Equipment Finance LLC 2011-A | 45-2589019 | | Delaware |
| 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 |
| MSC Holding Company, LLC | 45-4376777 | | Delaware |
| MassMutual Holding MSC, Inc. | 04-3341767 | | Massachusetts |
| MassMutual Holding LLC | 04-2854319 | | Delaware |
| Fern Street LLC | 37-1732913 | | Delaware |
| First Mercantile Trust Company | 62-0951563 | | Tennessee |
| Haven Life Insurance Agency, LLC | 46-2252944 | | Delaware |
| MassMutual Assignment Company | 06-1597528 | | North Carolina |
| MassMutual Capital Partners LLC | 04-1590850 | | Delaware |
| MassMutual Ventures LLC | 47-1296410 | | Delaware |
| MM Rothesay Holdco US LLC | 04-1590850 | | Delaware |
| MML Investors Services, LLC | 04-1590850 | | Massachusetts |
| MML Insurance Agency, LLC | 04-1590850 | | Massachusetts |
| MMLISI Financial Alliances, LLC | 41-2011634 | | 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> |
|---|-----------------------|---------------------|---|
| Society of Grownups, LLC | 47-1466022 | | Massachusetts |
| MM Asset Management Holding LLC | 45-4000072 | | Delaware |
| Barings LLC | 51-0504477 | | Delaware |
| 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 (U.K.) Limited | 98-0432153 | | United Kingdom |
| Barings GPC GP S.à. r.l. | None | | Luxembourg |
| Almack Mezzanine GP III Limited | 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 Global Advisors Limited | 98-1012393 | | United Kingdom |
| BCGSS 2 GP LLP | None | | United Kingdom |
| Babson European Direct Lending 1 GP LLP | None | | United Kingdom |
| Barings Advisers (Japan) KK | None | | Japan |
| 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 |
| Barings Real Estate Advisers Japan KK | None | | Japan |
| 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 Advisers GmbH | 98-1194368 | | Germany |
| MassMutual Baring Holding LLC | 04-1590850 | | Delaware |
| Baring North America LLC | 98-0241935 | | Massachusetts |
| MassMutual Holdings (Bermuda) Limited | None | | Bermuda |
| Baring Asset Management Limited | 98-0241935 | | 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 Asset Management (Asia) Holdings Limited | 98-0524271 | | Hong Kong, Special Administrative Region of China |
| Baring International Fund Managers (Bermuda) Limited | 98-0457465 | | Bermuda |

*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> |
|--|-----------------------|---------------------|---|
| Baring Asset Management (Asia) Limited | 98-0457463 | | Hong Kong, Special Administrative Region of China |
| Baring Asset Management Korea Limited | None | | Korea |
| Baring SICE (Taiwan) Limited | 98-0457707 | | Taiwan ROC |
| Baring Asset Management (Japan) Limited | 98-0236449 | | Japan |
| Baring Asset Management (Australia) Pty Limited | 98-0457456 | | Australia |
| 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 |
| Baring Pension Trustees Limited | 98-0457574 | | United Kingdom |
| Baring Investment Services Limited | 98-0457578 | | United Kingdom |
| Barings Australia Holding Company Pty Ltd | None | | Australia |
| Barings Australia Pty Ltd | 98-0457456 | | Australia |
| Barings Investment Advisers (Hong Kong) Limited | None | | Hong Kong, Special Administrative Region of China |
| Alchemy Copyrights, LLC.* | 47-2642354 | | Delaware |
| Chassis Acquisition Holding LLC | 81-2244465 | | Delaware |
| CRA Aircraft Holding LLC* | 81-4258759 | | Delaware |
| Milestone Acquisition Holding, LLC. | 47-3055009 | | Delaware |
| Red Lake Ventures, LLC | 46-5460309 | | Delaware |
| Remington L & W Holdings LLC* | 81-4065378 | | Connecticut |
| Solar Acquisition Holding, LLC | None | | Delaware |
| Sweet Tree Holdings 1, LLC | 46-3123110 | | Delaware |
| Tamiami Citrus, LLC | None | | Delaware |
| Teaktree Acquisition, LLC | None | | Delaware |
| U.S. Buyer Broadcasting, LLC | 47-1855920 | | Delaware |
| U.S. WIG Holdings, LP | 46-1500495 | | Delaware |
| U.S. Pharmaceuticals Holdings II, LLC | 47-5436800 | | Delaware |
| VGS Acquisition Holding, LLC | None | | Delaware |
| WC Aircraft Holdings US II, LLC | 46-3378584 | | Delaware |
| Wood Creek Aircraft Holding I, LP | None | | Cayman Islands |
| Baring Asset-Based Income Fund (US) GP, LLC | None | | Delaware |
| Babson Capital Floating Rate Income Fund Management, LLC | 04-1590850 | | Delaware |
| Babson Global Loan Feeder Management, LLC | None | | Delaware |
| Barings CLO Investment Partners GP, LLC | None | | Delaware |
| Barings Global Energy Infrastructure Advisors, LLC | None | | Delaware |
| Barings North American Private Loan Fund Management, LLC | None | | Delaware |
| Barings TERO Management LLC | None | | Delaware |
| Benton Street Advisors, Inc. | 98-0536233 | | Cayman Islands |
| Great Lakes III GP, LLC | 04-1590850 | | Delaware |
| Lake Jackson LLC | None | | Delaware |
| Loan Strategies Management 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> |
|---|-----------------------|---------------------|---|
| Mezzco LLC | 04-1590850 | | Delaware |
| Mezzco II LLC | 02-0767001 | | Delaware |
| Mezzco III LLC | 41-2280126 | | Delaware |
| Mezzco IV LLC | 80-0920285 | | Delaware |
| Mezzco Australia LLC | 90-0666326 | | Delaware |
| Mezzco Australia II LLC | None | | Delaware |
| Somerset Special Opportunities Management LLC | 04-1590850 | | Delaware |
| Oppenheimer Acquisition Corp. | 84-1149206 | | Delaware |
| OppenheimerFunds, Inc. | 13-2527171 | | Colorado |
| OppenheimerFunds Distributor, Inc. | 13-2953455 | | New York |
| Oppenheimer Real Asset Management, Inc. | 84-1106295 | | Delaware |
| OFI Global Institutional, Inc. | 13-4160541 | | New York |
| HarbourView Asset Management Corporation | 22-2697140 | | New York |
| OFI Global Trust Company | 13-3459790 | | New York |
| OFI International, Ltd. | None | | United Kingdom |
| SNW Asset Management Corporation | None | | Delaware |
| Seattle Northwest Asset Management LLC | None | | Washington |
| Trinity Investment Management Corporation | 25-1951632 | | Pennsylvania |
| OFI SteelPath, Inc. | 84-1128397 | | Delaware |
| Shareholder Services, Inc. | 84-1066811 | | Colorado |
| VTL Associates, LLC | None | | Pennsylvania |
| Index Management Solutions, LLC | None | | Pennsylvania |
| OFI Global Asset Management, Inc. | 84-0765063 | | Delaware |
| OFI Private Investments Inc. | 91-2036414 | | New York |
| Tremont Group Holdings, LLC | 62-1210532 | | New York |
| Tremont Partners, LLC | 06-1121864 | | Connecticut |
| Tremont GP, LLC | 20-8215352 | | Delaware |
| Settlement Agent LLC | 90-0874510 | | Delaware |
| Tremont (Bermuda) Limited | None | | Bermuda |
| MassMutual International LLC | 04-3313782 | | Delaware |
| MassMutual Asia Limited | None | | Hong Kong, Special Administrative Region of China |
| MassMutual Asia Investors Ltd. | None | | Hong Kong, Special Administrative Region of China |
| MassMutual Guardian Limited | None | | Hong Kong, Special Administrative Region of China |
| MassMutual Insurance Consultants Limited | None | | Hong Kong, Special Administrative Region of China |
| MassMutual Services Limited | None | | Hong Kong, Special Administrative Region of China |
| MassMutual Trustees Limited | None | | Hong Kong, Special Administrative Region of China |
| Protective Capital (International) Limited | 98-0610331 | | Hong Kong, Special Administrative Region of China |
| MassMutual Life Insurance Company | None | | Japan |
| MassMutual Internacional (Chile) SpA | 98-1033127 | | Chile |
| MML Management Corporation | 04-2443240 | | Massachusetts |
| MassMutual International Holding MSC, Inc. | 04-3548444 | | 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> |
|--|-----------------------|---------------------|--------------------------|
| MML Mezzanine Investor II, LLC | 04-1590850 | | Delaware |
| MML Mezzanine Investor III, LLC | 04-1590850 | | Delaware |
| MassMutual External Benefits Group LLC | 27-3576835 | | Delaware |
| Cornerstone Global REIT Corporation | 20-8730751 | | Delaware |
| Other Affiliates & Funds: | | | |
| 100 w. 3 rd Street LLC | 04-1590850 | | Delaware |
| 300 South Tryon Hotel LLC | 04-1590850 | | Delaware |
| 300 South Tryon LLC | 04-1590850 | | Delaware |
| 54 West Capital LLC | 20-3887968 | | Delaware |
| Alexandria Towers Investors LLC | 16-1720387 | | Delaware |
| Almack Mezzanine Fund I LP* | None | | United Kingdom |
| Almack Mezzanine Fund II Unleveraged LP | None | | United Kingdom |
| Almack Mezzanine Fund III LP* | None | | United Kingdom |
| Barings Emerging Markets Corporate Bond Fund | None | | Ireland |
| Barings Emerging Markets Local Debt Fund | None | | Ireland |
| Barings Global Special Situations Credit Fund 1 | None | | Ireland |
| 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. 2013-II | 98-1128827 | | Cayman Islands |
| Babson CLO Ltd. 2014-I | None | | Cayman Islands |
| Babson CLO Ltd. 2014-II | None | | Cayman Islands |
| Babson CLO Ltd. 2014-III | 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 |
| 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 |
| Baring Focused EAFE Equity Fund | 11-3789446 | | Delaware |
| Baring Global Dynamic Asset Allocation Fund | 30-0607379 | | Delaware |
| Barings Global Energy Infrastructure Fund 1 LP | 98-1332384 | | Cayman Islands |
| Barings Global Private Loan Fund | None | | Luxembourg |
| Barings North American Private Loan Fund LP | 38-4010344 | | Delaware |
| Barings RE Credit Strategies VII LP | 98-1332384 | | 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> |
|--|-----------------------|---------------------|--------------------------|
| Baring International Small Cap Equity Fund | 26-4142796 | | Delaware |
| Barings CLO Investment Partners LP | 81-0841854 | | Delaware |
| Barings Real Estate European Value Add I SCSp* | None | | United Kingdom |
| Benton Street Partners I, L.P.* | 98-0536233 | | Cayman Islands |
| Benton Street Partners II, L.P.* | 98-0536199 | | Cayman Islands |
| Braemar Energy Ventures I, L.P. * | None | | Delaware |
| Cambridge Hotel, LLC | 06-1614196 | | Delaware |
| Cheyenne Mountain Resort LLC | 04-1590850 | | Delaware |
| Barings European Core Property Fund SCSp | None | | Luxembourg |
| Cornerstone Core Mortgage Venture I LP | 27-1701622 | | Delaware |
| Cornerstone Enhanced Mortgage Fund I LP | 45-3751572 | | Delaware |
| Cornerstone Global Real Estate LP* | 20-8730751 | | Delaware |
| Cornerstone High Yield Venture LP | 36-4770946 | | Delaware |
| Barings/LAZ Parking Fund LP | 46-5437441 | | Delaware |
| Barings Core Property Fund LP | 20-5578089 | | Delaware |
| Cornerstone Real Estate Fund VIII LP | 27-0547156 | | Delaware |
| Cornerstone Real Estate Fund X LP | 46-5432619 | | Delaware |
| Duchess VI CLO B.V. | None | | United Kingdom |
| Duchess VII CLO B.V. | None | | United Kingdom |
| E-Wise Land Venture LLC | 20-3887968 | | Delaware |
| Gateway Mezzanine Partners I, L.P.* | 80-0691253 | | Delaware |
| Gateway Mezzanine Partners II LP* | 90-0991195 | | Delaware |
| Great Lakes III, L.P. | 37-1708623 | | Delaware |
| JPMDB Commercial Mortgage Securities Trust 2017-C5 | 38-4032059 | | New York |
| Kazwell Realty Partners LLC | 20-3887968 | | Delaware |
| Marco Hotel LLC | 46-4255307 | | Delaware |
| MM Debt Participations LLC | 81-3000420 | | Delaware |
| MML O'Hare Hotel LLC | 26-3799762 | | Delaware |
| Oakley Grove Development LLC | 20-3887968 | | Delaware |
| Old Pasco Properties LLC | 20-3887968 | | Delaware |
| Reston Arboretum LLC | 75-2901061 | | Delaware |
| Riva Portland LLC | 30-0713071 | | Delaware |
| Rockall CLO B.V. | None | | United Kingdom |
| Rockville Town Center LLC | 54-2055778 | | Virginia |
| Seattle 1415 Hotel Owner LLC | 46-5491311 | | Delaware |
| Sedona TFMP Land LLC | 04-1590850 | | Delaware |
| Somerset Special Opportunities Fund L.P.* | 20-8856877 | | Delaware |
| South Myrtle Monrovia MM LLC | 04-1590850 | | Delaware |
| South Pasco Properties LLC | 20-3887968 | | Delaware |
| Tower Square Capital Partners, L.P.* | 04-3722906 | | Delaware |
| Tower Square Capital Partners II, L.P.* | 30-0336246 | | 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> |
|---|-----------------------|---------------------|--------------------------|
| Tower Square Capital Partners II-A, L.P.* | 32-0160190 | | 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 |
| West 46 th Street Hotel LLC | 05-1590850 | | Delaware |
| Barings Affiliates & Funds: | | | |
| Barings Emerging Markets Debt Blended Total Return Fund | None | | Ireland |
| Barings Emerging Markets Debt Short Duration Fund | None | | Ireland |
| Barings Emerging Markets Sovereign Debt Fund | None | | Ireland |
| Babson Capital Floating Rate Income Fund, L.P. | 27-3330830 | | Delaware |
| Barings Global Investment Grade Corporate Plus Fund | None | | Ireland |
| Babson Capital Loan Strategies Master Fund LP | None | | Cayman Islands |
| Barings Emerging Markets Debt Blended Total Return Fund | 47-3758432 | | Massachusetts |
| Barings Emerging Markets Local Currency Debt Fund | 47-3774453 | | Massachusetts |
| Barings Global High Yield Fund | 47-3790192 | | Massachusetts |
| Baring Greater China Equity Fund | None | | Hong Kong |
| Barings Total Return Bond Fund | 47-3734770 | | Massachusetts |
| Barings U.S. High Yield Fund | 47-3801860 | | Massachusetts |
| Gateway Mezzanine Partners I Trust | None | | Australia |
| Great Lakes II LLC* | 71-1018134 | | Delaware |
| Great Lakes LLC* | 56-2505390 | | Delaware |
| Intermodal Holding II LLC* | 46-2344300 | | Delaware |
| Somerset Special Opportunities Master Fund LP | None | | Cayman Islands |
| Wood Creek Venture Fund LLC | 04-1590850 | | Delaware |
| Barings Real Estate Affiliates & Funds: | | | |
| 12-18 West 55th Street Predevelopment, LLC* | 20-2548283 | | Delaware |
| 50 Liberty LLC* | 36-4823011 | | Delaware |
| One Harbor Shore LLC* | 80-0948028 | | Delaware |
| Budapester Strasse LLC | 81-4382111 | | Delaware |
| CHC/RFP VI Core LLC | 04-1590850 | | Delaware |
| Cornerstone California Mortgage Fund I LLC | 95-4207717 | | California |
| Cornerstone California Mortgage Fund II LLC | 95-4207717 | | California |
| Cornerstone Fort Pierce Development LLC* | 56-2630592 | | Delaware |
| Cornerstone Permanent Mortgage Fund | 45-2632610 | | Massachusetts |
| Cornerstone Permanent Mortgage Fund II | 61-1750537 | | Massachusetts |
| Cornerstone Permanent Mortgage Fund III | 35-2531693 | | Massachusetts |
| Cornerstone Permanent Mortgage Fund IV | 61-1793735 | | Massachusetts |
| CREA 330 Third LLC* | 46-5001122 | | Delaware |
| CREA FMF Nashville LLC | 46-4367364 | | Delaware |
| CREA/LYON West Gateway, LLC* | 26-2399532 | | Delaware |
| CREA Madison Member LLC | 81-0890084 | | 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> |
|--|-----------------------|---------------------|--------------------------|
| CREA/PPC Venture LLC* | 20-0348173 | | Delaware |
| CCB Montford Park LLC* | 82-1563809 | | Delaware |
| Fallon Cornerstone One MPD LLC* | 26-1611591 | | Delaware |
| Fan Pier Development LLC* | 20-3347091 | | Delaware |
| Farringdon London Holdings LLC* | 46-3880526 | | Delaware |
| Infinity SCD Ltd. | None | | United Kingdom |
| Johnston Groves LLC | 20-4819358 | | Delaware |
| Landmark Manchester Holdings LLC | 81-5360103 | | Delaware |
| MM Chatham Office LLC* | 81-2871333 | | Delaware |
| Salomon Brothers Commercial Mortgage Trust 2001-MM | None | | Delaware |
| Sawgrass Village Shopping Center LLC* | 27-2977720 | | Delaware |
| Ten Fan Pier Boulevard LLC* | None | | Delaware |
| Three PW Office Holding LLC | 81-5273574 | | Delaware |
| Twenty Two Liberty LLC* | 35-2484550 | | Massachusetts |
| UK LIW Manager LLC | 45-4606547 | | Delaware |
| UK LIW Member LLC | 45-4606547 | | Delaware |
| Washington Gateway Apartments Venture LLC* | 45-5401109 | | Delaware |
| Waterford Development Associates | 20-2970495 | | Delaware |
| Waterloo London Holdings LLC | 47-1993493 | | Delaware |
| WeHo Domain LLC* | 46-3122029 | | Delaware |
| Willowood Lakeside Master LLC | 81-1552222 | | Delaware |
| Ygnatio Valley Funding | 20-5481477 | | 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 |
| 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 |

*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> |
|--|-----------------------|---------------------|--------------------------|
| MML Series II Equity Rotation Fund | 47-3544629 | | Massachusetts |
| MML Series II Special Situations Fund | 47-3559064 | | Massachusetts |
| MassMutual RetireSMART Funds: | | | |
| 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 Moderate Fund | 45-1618262 | | Massachusetts |
| MassMutual RetireSMART Moderate Growth Fund | 45-1618046 | | Massachusetts |
| Oppenheimer Funds: | | | |
| Oppenheimer Developing Markets Fund | 93-6305075 | | Delaware |
| Oppenheimer Developing Markets Equity UCITS | None | | Ireland |
| Oppenheimer Emerging Markets Innovators UCITS | None | | Ireland |
| Oppenheimer ESG Revenue ETF | 81-3492794 | | Delaware |
| Oppenheimer Global ESG Revenue ETF | 81-3480754 | | Delaware |
| Oppenheimer Global Equity UCITS | None | | Ireland |
| Oppenheimer Global Multi-Asset Growth Fund | 47-3676235 | | Delaware |
| Oppenheimer Global Multi-Asset Income Fund | 47-1714929 | | Delaware |
| Oppenheimer Global Value Equity UCITS | None | | Ireland |
| Oppenhemier International Growth & Income Fund | 81-3136071 | | Delaware |
| Oppenheimer Macquarie Global Infrastructure Fund | 81-1080638 | | 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.

STATEMENT AS OF JUNE 30, 2017 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) | * |
| .0435 | Massachusetts Mut Life Ins Co | 65935 | 04-1590850 | 3848388 | 0000225602 | | Massachusetts Mutual Life Insurance Company (MMLIC) | MA | UIP | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0435 | CM Life Ins Co | 93432 | 06-1041383 | | | | C.M. Life Insurance Company | CT | LDP | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0435 | MML Baystate Life Ins Co | 70416 | 43-0581430 | | 0000924777 | | MML Bay State Life Insurance Company | CT | RE | C.M. Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 06-1041383 | | | | CML Mezzanine Investor, LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 06-1041383 | | | | CML Mezzanine Investor L, LLC | DE | NIA | 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 | | | 04-1590850 | | | | MML Mezzanine Investor L, LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MML Special Situations Investor LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 47-5322979 | | | | Timberland Forest Holding LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 47-5322979 | | | | Timberland Forest Holding LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 47-5322979 | | | | Timberland Forest Holding LLC | DE | NIA | Wood Creek Capital Management LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Lyme Adirondack Forest Company, LLC | DE | NIA | Timberland Forest Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 20-5305426 | | | | Lyme Adirondack Timber Sales, Inc. | NY | NIA | Timberland Forest Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Lyme Adirondack Timberlands I, LLC | DE | NIA | Timberland Forest Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Lyme Adirondack Timberlands II, LLC | DE | NIA | Timberland Forest Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Berkshire Way LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 26-4441097 | | | | WP-SC, LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 81.400 | MMLIC | | |
| .0000 | | | 26-4441097 | | | | WP-SC, LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 18.600 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MSP-SC, LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 27-1435692 | | | | Country Club Office Plaza LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 88.100 | MMLIC | | |
| .0000 | | | 27-1435692 | | | | Country Club Office Plaza LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 11.900 | MMLIC | | |
| .0000 | | | 56-2574604 | | | | Invicta Advisors LLC | 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 Intellectual Property 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 | | | | | | | Apex Credit Partners LLC | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Fund V 2017 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 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 | | | | | | | JFAM Loan Fund, LP | DE | NIA | JFIN Asset Management, LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Co-Issuer Corporation | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Europe GP, S.a.r.l. | LUX | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Jefferies Finance Europe, SCSp | LUX | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Jefferies Finance Business Credit LLC | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Business Credit Fund I LLC | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN High Yield Investments LLC | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN LC Fund LLC | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Revolver CLO Holdings LLC | DE | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |

STATEMENT AS OF JUNE 30, 2017 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|------------|-------------------|------------|--------------|------------|--|---|----------------------|----------------------------------|--|--|--|--|----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domiciliary Location | Relationship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Required? (Y/N) | * |
| .0000 | | | | | | | JFIN CLO 2007 Ltd. | .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 Ltd. | .CYM | NIA | Jefferies Finance LLC | Ownership | 70.000 | MMLIC | | |
| .0000 | | | | | | | JFIN CLO 2014 Ltd. | .CYM | NIA | Apex Credit Partners LLC | Ownership | 30.000 | MMLIC | | |
| .0000 | | | | | | | JFIN CLO 2014-11 Ltd. | .CYM | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN MM CLO 2014 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 CLO 2015-11 Ltd. | .CYM | NIA | Jefferies Finance LLC | Ownership | 33.000 | MMLIC | | |
| .0000 | | | | | | | JFIN CLO 2015-11 Ltd. | .CYM | NIA | Apex Credit Partners LLC | Ownership | 53.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Revolver CLO Ltd. | .CYM | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Revolver CLO 2014 Ltd. | .CYM | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Revolver CLO 2015 Ltd. | .CYM | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN Revolver CLO 2015-11 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 CLO 2016 Ltd. | .CYM | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | JFIN CLO 2017 Ltd. | .CYM | NIA | Jefferies Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MassMutual Retirement Services, LLC | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-3356880 | | 0000943903 | | MML Distributors LLC | .MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 99.000 | MMLIC | | |
| .0000 | | | 04-3356880 | | 0000943903 | | MML Distributors LLC | .MA | NIA | MassMutual Holding LLC | Ownership | 1.000 | MMLIC | | |
| .0000 | | | | | | | MML Investment Advisers, LLC | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MML Mezzanine Investor, LLC | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 46-3238013 | | | | MML Strategic Distributors, LLC | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 06-1563535 | 2881445 | 0001103653 | | The MassMutual Trust Company, FSB | .CT | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | Y | |
| .0000 | | | 04-1590850 | | | | MMC Equipment Finance LLC | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 26-0073611 | | | | MassMutual Asset Finance LLC | .DE | NIA | MMC Equipment Finance LLC | Ownership | 99.600 | MMLIC | | |
| .0000 | | | 26-0073611 | | | | MassMutual Asset Finance LLC | .DE | NIA | C.M. Life Insurance Company | Ownership | 0.400 | MMLIC | | |
| .0000 | | | 27-1379258 | | | | MMAF Equipment Finance LLC 2009-A | .DE | NIA | MassMutual Asset Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 45-2569019 | | | | MMAF Equipment Finance LLC 2011-A | .DE | NIA | MassMutual Asset Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MML Private Placement Investment Company I, LLC | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | 0000067160 | | MML Private Equity Fund Investor LLC | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MM Private Equity Intercontinental LLC | .DE | NIA | MML Private Equity Fund Investor LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 45-2738137 | | | | Pioneers Gate LLC | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 45-4376777 | | | | MSC Holding Company, LLC | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | Y | |
| .0000 | | | 04-3341767 | | | | MassMutual Holding MSC, Inc. | .MA | NIA | MSC Holding Company, LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-2854319 | 2392316 | | | MassMutual Holding LLC | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | Y | |
| .0000 | | | 06-1597528 | | | | MassMutual Assignment Company | .NC | NIA | MassMutual Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 37-1732913 | | | | Fern Street LLC | .DE | NIA | MassMutual Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 62-0951563 | 1160004 | 0001259664 | | First Mercantile Trust Company | .TN | 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 | | 0001399869 | | MassMutual Capital Partners LLC | .DE | NIA | MassMutual Holding LLC | Ownership | 100.000 | MMLIC | | |

STATEMENT AS OF JUNE 30, 2017 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 | | | 47-1296410 | | | | MassMutual Ventures LLC | .DE | NIA | MassMutual Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MM Rothesay Holdco US LLC | .DE | NIA | MassMutual Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 47-1466022 | | | | Society of Grownups, LLC | .MA | NIA | MassMutual Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | 0000701059 | | MML Investors Services, LLC | .MA | NIA | MassMutual Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MML Insurance Agency, LLC | .MA | NIA | MML Investors Services, LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 41-2011634 | | 0001456663 | | 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 | | 0000009015 | | Barings LLC | .DE | NIA | MassMutual Asset Management Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 80-0875475 | | | | Barings Finance LLC | .DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | BCF Europe Funding Limited | .JRL | NIA | Barings Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | BCF Senior Funding I LLC | .DE | NIA | Barings Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | BCF Senior Funding I Designated Activity Company | .JRL | NIA | Barings Finance LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-3238351 | | 0000930012 | | Barings Securities LLC | .DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0437588 | | | | Barings Guernsey Limited | .GGY | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0432153 | | | | Barings (U.K.) Limited | .GBR | NIA | Barings Guernsey Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Europe Limited | .GBR | NIA | Barings Guernsey Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings GPC GP S.à. r.l. | .LUX | NIA | Barings (U.K.) Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine GP III Limited | .GBR | NIA | Barings (U.K.) Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Almack Holding Partnership GP Limited | .GBR | NIA | Barings (U.K.) Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine Fund Limited | .GBR | NIA | Barings (U.K.) Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine Fund II Limited | .GBR | NIA | Barings (U.K.) Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-1012393 | | | | Barings Global Advisors Limited | .GBR | NIA | Barings (U.K.) Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | BCGSS 2 GP LLP | .GBR | NIA | Barings (U.K.) Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Babson European Direct Lending 1 GP LLP | .GBR | NIA | Barings (U.K.) Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Advisers (Japan) KK | .JPN | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Multifamily Capital Holdings LLC | .DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Multifamily Capital LLC | .WI | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Multifamily Capital Corporation | .DE | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-3238351 | 3456895 | 0001011148 | | Barings Real Estate Advisers Inc. | .CA | NIA | Barings Real Estate Advisers LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Real Estate Advisers Japan KK | .JPN | NIA | Barings Real Estate Advisers LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Real Estate UK Holdings Limited | .DE | NIA | Barings Real Estate Advisers LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | BREAЕ AIFM LLP | .GBR | NIA | Barings Real Estate Advisers LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Real Estate Advisers (Continental Europe) Limited | .GBR | NIA | Barings Real Estate UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0654401 | | | | Barings Real Estate Advisers Europe LLP | .GBR | NIA | Barings Real Estate UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0654388 | | | | Barings Real Estate Advisers Europe Finance LLP | .GBR | NIA | Barings Real Estate UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0654412 | | | | Barings Real Estate Advisers GmbH | .DEU | NIA | Barings Real Estate UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-1194368 | | | | MassMutual Baring Holding LLC | .DE | NIA | MassMutual Asset Management Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Baring North America LLC | .MA | NIA | MassMutual Baring Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0241935 | 2363071 | 0000932463 | | MassMutual Holdings (Bermuda) Limited | .BMU | NIA | MassMutual Baring Holding LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Baring Asset Management Limited | .GBR | NIA | MassMutual Holdings (Bermuda) Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0241935 | | | | Baring International Investment Limited | .GBR | NIA | Baring Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457328 | | 0001568131 | | Baring International Investment Management Holdings | .GBR | NIA | Baring Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457587 | | | | Baring Asset Management UK Holdings Limited | .GBR | NIA | Barings Real Estate UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457576 | | | | Baring Asset Management GmbH | .DEU | NIA | Barings Real Estate UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0465031 | | | | Baring Asset Management (Asia) Holdings Limited | .HKG | NIA | Barings Real Estate UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0524271 | | | | Baring International Fund Managers (Bermuda) Limited | .BMU | NIA | Barings Real Estate UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457465 | | | | Baring International Fund Managers (Bermuda) Limited | .BMU | NIA | Barings Real Estate UK Holdings Limited | Ownership | 100.000 | MMLIC | | |

STATEMENT AS OF JUNE 30, 2017 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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|------------|------------|-------------------|------------|--------------|-----|--|--|-----------------------|-----------------------------------|---|--|--|--|-----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domi-ciliary Location | Relation-ship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Re-quired? (Y/N) | * |
| .0000 | | | 98-0457463 | | | | Baring Asset Management (Asia) Limited | .HKG | NIA | Baring Asset Management (Asia) Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Baring Asset Management Korea Limited | .KOR | NIA | Baring Asset Management (Asia) Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457707 | | | | Baring SICE (Taiwan) Limited | .TWN | NIA | Baring Asset Management (Asia) Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0236449 | | | | Baring Asset Management (Japan) Limited | .JPN | NIA | Baring Asset Management (Asia) Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457456 | | | | Baring Asset Management (Australia) Pty Limited | .AUS | NIA | Baring Asset Management (Asia) Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0524272 | | | | Baring International Fund Managers (Ireland) Limited | .IRL | NIA | Baring Asset Management UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Baring Asset Management Switzerland Sarl | .CHE | NIA | Baring Asset Management UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0497550 | | | | Baring France SAS | .FRA | NIA | Baring Asset Management UK Holdings Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457586 | | | | Baring Fund Managers Limited | .GBR | NIA | Baring Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457574 | | | | Baring Pension Trustees Limited | .GBR | NIA | Baring Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457578 | | | | Baring Investment Services Limited | .GBR | NIA | Baring Asset Management Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-0457456 | | | | Barings Australia Holding Company Pty Ltd | .AUS | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Australia Pty Ltd | .AUS | NIA | Baring Australia Holding Company Pty Ltd. | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Investment Advisors (Hong Kong) Limited | .HKG | NIA | Barings LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 47-2642354 | | | | Alchemy Copyrights, LLC. | .DE | NIA | MassMutual Holding LLC | Ownership/Influence | 15.100 | MMLIC | | |
| .0000 | | | 47-2642354 | | | | Alchemy Copyrights, LLC. | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.100 | MMLIC | | |
| .0000 | | | 47-2642354 | | | | Alchemy Copyrights, LLC. | .DE | NIA | Barings LLC | Influence | | 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 | 40.900 | MMLIC | | |
| .0000 | | | 81-4258759 | | | | CRA Aircraft Holding LLC | .DE | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 47-3055009 | | | | Milestone Acquisition Holding, LLC. | .DE | NIA | MassMutual Holding LLC | Ownership/Influence | 18.300 | MMLIC | | |
| .0000 | | | 47-3055009 | | | | Milestone Acquisition Holding, LLC. | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 47-3055009 | | | | Milestone Acquisition Holding, LLC. | .DE | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 46-5460309 | | | | Red Lake Ventures, LLC | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 15.800 | MMLIC | | |
| .0000 | | | 46-5460309 | | | | Red Lake Ventures, LLC | .DE | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 81-4065378 | | | | Remington L & W Holdings LLC | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 66.300 | MMLIC | | |
| .0000 | | | 81-4065378 | | | | Remington L & W Holdings LLC | .DE | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 46-3123110 | | | | Sweet Tree Holdings 1, LLC | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 25.600 | MMLIC | | |
| .0000 | | | 46-3123110 | | | | Sweet Tree Holdings 1, 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 | | | | | | | U.S. Buyer Broadcasting, LLC | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 12.700 | MMLIC | | |
| .0000 | | | | | | | U.S. Buyer Broadcasting, LLC | .DE | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 46-1500495 | | | | U.S. WIG Holdings, LP | .DE | NIA | MassMutual Holding LLC | Ownership/Influence | 11.700 | MMLIC | | |
| .0000 | | | 46-1500495 | | | | U.S. WIG Holdings, LP | .DE | NIA | Barings LLC | Influence | | MMLIC | | |

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SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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|------------|------------|-------------------|------------|--------------|------------|--|--|----------------------|----------------------------------|--|--|--|--|----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | 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 | | | 06-1121864 | | 0000764139 | | Tremont Partners, LLC | .CT | NIA | Tremont Group Holdings, Inc. | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 20-8215352 | | | | Tremont GP, LLC | .DE | NIA | Tremont Group Holdings, Inc. | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 90-0874510 | | | | Settlement Agent LLC | .DE | NIA | Tremont GP | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Tremont (Bermuda) Limited | .BMU | NIA | Tremont Group Holdings, Inc. | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-3313782 | | | | MassMutual International LLC | .DE | NIA | Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Asia Limited | .HKG | IA | MassMutual International LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Asia Investors Ltd. | .HKG | NIA | MassMutual Asia Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Guardian Limited | .HKG | NIA | MassMutual Asia Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Insurance Consultants Limited | .HKG | NIA | MassMutual Asia Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Services Limited | .HKG | NIA | MassMutual Asia Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Trustees Limited | .HKG | NIA | MassMutual Asia Limited | Ownership | 80.000 | MMLIC | | |
| .0000 | | | 98-0610331 | | | | Protective Capital (International) Limited | .HKG | NIA | MassMutual Asia Limited | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 98-1033127 | | | | MassMutual Internacional (Chile) SpA | .CHL | NIA | MassMutual International LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | MassMutual Life Insurance Company | .JPN | IA | MassMutual International LLC | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-2443240 | | | | MML Management Corporation | .MA | NIA | Company | Ownership | 100.000 | MMLIC | | Y |
| .0000 | | | 04-3548444 | | | | MassMutual International Holding MSC, Inc. | .MA | NIA | MML Management Corporation | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MML Mezzanine Investor II, LLC | .DE | NIA | Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | MML Mezzanine Investor III, LLC | .DE | NIA | Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 27-3576835 | | | | MassMutual External Benefits Group LLC | .DE | NIA | Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 20-8730751 | | | | Cornerstone Global REIT Corporation | .DE | NIA | Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | 100 w. 3rd Street LLC | .DE | NIA | Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | 300 South Tryon Hotel LLC | .DE | NIA | Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | 300 South Tryon LLC | .DE | NIA | Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 20-3887968 | | | | 54 West Capital LLC | .DE | NIA | Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 16-1720387 | | | | Alexandria Towers Investors LLC | .DE | NIA | Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine Fund I LP | .GBR | NIA | Company | Ownership/Influence | 41.800 | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine Fund I LP | .GBR | NIA | C.M. Life Insurance Company | Ownership | 4.600 | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine Fund I LP | .GBR | NIA | Barings (U.K.) Limited | Management | | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine Fund II Unleveraged LP | .GBR | NIA | Company | Ownership/Influence | 73.100 | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine Fund II Unleveraged LP | .GBR | NIA | Barings (U.K.) Limited | Management | | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine Fund III LP | .GBR | NIA | Company | Ownership/Influence | 34.300 | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine Fund III LP | .GBR | NIA | C.M. Life Insurance Company | Ownership | 3.800 | MMLIC | | |
| .0000 | | | | | | | Almack Mezzanine Fund III LP | .GBR | NIA | Barings (U.K.) Limited | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Emerging Markets Corporate Bond Fund | .IRL | NIA | Company | Ownership/Influence | 97.000 | MMLIC | | |
| .0000 | | | | | | | Barings Emerging Markets Corporate Bond Fund | .IRL | NIA | Company | Ownership/Influence | | MMLIC | | |
| .0000 | | | | | | | Barings Emerging Markets Local Debt Fund | .IRL | NIA | Company | Ownership/Influence | 24.400 | MMLIC | | |
| .0000 | | | | | | | Barings Emerging Markets Local Debt Fund | .IRL | NIA | Barings LLC | Management | | MMLIC | | |

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|------------|------------|-------------------|------------|--------------|------------|--|---|----------------------|----------------------------------|--|--|--|--|----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | 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 Global Special Situations Credit Fund 1 | .IRL | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Global Special Situations Credit Fund 1 | .IRL | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 98-1206017 | | | | Babson Capital Global Special Situation Credit Fund 2 | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 23.900 | 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 | 79.100 | MMLIC | | |
| .0000 | | | 37-1506417 | | | | Babson Capital Loan Strategies Fund, L.P. | .DE | NIA | C.M. Life Insurance Company | Ownership | 3.800 | MMLIC | | |
| .0000 | | | 37-1506417 | | | | Babson Capital Loan Strategies Fund, L.P. | .DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings US High Yield Bond Fund | .IRL | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 43.000 | MMLIC | | |
| .0000 | | | | | | | Barings US High Yield Bond Fund | .IRL | NIA | C.M. Life Insurance Company | Ownership | 5.700 | MMLIC | | |
| .0000 | | | | | | | Barings US High Yield Bond Fund | .IRL | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Babson CLO Ltd. 2012-II | .CYM | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 98-1128827 | | | | Babson CLO Ltd. 2013-I | .CYM | NIA | Barings LLC | Influence | | MMLIC | | 4 |
| .0000 | | | | | | | Babson CLO Ltd. 2013-II | .CYM | NIA | Barings LLC | Influence | | MMLIC | | 5 |
| .0000 | | | | | | | Babson CLO Ltd. 2014-I | .CYM | NIA | Barings LLC | Influence | | MMLIC | | 2 |
| .0000 | | | | | | | Babson CLO Ltd. 2014-II | .CYM | NIA | Barings LLC | Influence | | MMLIC | | 6 |
| .0000 | | | | | | | Babson CLO Ltd. 2014-III | .CYM | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Babson CLO Ltd. 2015-I | .CYM | NIA | Barings LLC | Influence | | MMLIC | | 7 |
| .0000 | | | | | | | Babson CLO Ltd. 2015-II | .CYM | NIA | Barings LLC | Influence | | MMLIC | | 8 |
| .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 | | | | | | | Babson Euro CLO 2014-I BV | .NLD | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Babson Euro CLO 2014-II BV | .NLD | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Babson Euro CLO 2015-I BV | .NLD | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Babson Euro CLO 2016-I BV | .NLD | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 81-0841854 | | | | Barings CLO Investment Partners LP | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 99.400 | MMLIC | | |
| .0000 | | | 81-0841854 | | | | Barings CLO Investment Partners LP | .DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Real Estate European Value Add I SCSp | .GBR | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 90.000 | MMLIC | | |
| .0000 | | | | | | | Barings Real Estate European Value Add I SCSp | .GBR | NIA | C.M. Life Insurance Company | Ownership | 10.000 | MMLIC | | |
| .0000 | | | | | | | Barings Real Estate European Value Add I SCSp | .GBR | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 11-3789446 | | | | Baring Focused EAFE Equity Fund | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 43.200 | MMLIC | | |
| .0000 | | | 11-3789446 | | | | Baring Focused EAFE Equity Fund | .DE | NIA | Baring Asset Management Limited | Management | | MMLIC | | |
| .0000 | | | 30-0607379 | | 0001497049 | | Baring Global Dynamic Asset Allocation Fund | .DE | NIA | Baring Asset Management Limited | 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 | .CYM | NIA | Baring Asset Management Limited | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Global Private Loan Fund | .LUX | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 18.600 | MMLIC | | |
| .0000 | | | | | | | Barings Global Private Loan Fund | .LUX | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 38-4010344 | | | | Barings North American Private Loan Fund LP | .DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 82.000 | MMLIC | | |

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PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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|------------|------------|-------------------|------------|--------------|------------|--|---|----------------------|----------------------------------|---|--|--|--|----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domiciliary Location | Relationship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Required? (Y/N) | * |
| .0000 | | | 38-4010344 | | | | Barings North American Private Loan Fund LP | DE | NIA | Baring Asset Management Limited Massachusetts Mutual Life Insurance Company | Management | | MMLIC | | |
| .0000 | | | 98-1332384 | | | | Barings RE Credit Strategies VII LP | DE | NIA | Baring Asset Management Limited Massachusetts Mutual Life Insurance Company | Ownership/Influence | 28.800 | MMLIC | | |
| .0000 | | | 98-1332384 | | | | Barings RE Credit Strategies VII LP | DE | NIA | Baring Asset Management Limited Massachusetts Mutual Life Insurance Company | Management | | MMLIC | | |
| .0000 | | | 26-4142796 | | | | Baring International Small Cap Equity Fund | DE | NIA | Baring Asset Management Limited | Ownership/Influence | 64.300 | MMLIC | | |
| .0000 | | | 26-4142796 | | | | Baring International Small Cap Equity Fund | DE | NIA | Baring Asset Management Limited | Management | | MMLIC | | |
| .0000 | | | 98-0536233 | | | | Benton Street Partners I, L.P. | CYM | NIA | MassMutual Capital Partners LLC | Ownership/Influence | 99.100 | MMLIC | | |
| .0000 | | | 98-0536233 | | | | Benton Street Partners I, L.P. | CYM | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 98-0536233 | | | | Benton Street Partners I, L.P. | CYM | NIA | C.M. Life Insurance Company Massachusetts Mutual Life Insurance Company | Ownership | 0.100 | MMLIC | | |
| .0000 | | | 98-0536233 | | | | Benton Street Partners I, L.P. | CYM | NIA | Company | Ownership | 0.400 | MMLIC | | |
| .0000 | | | 98-0536199 | | | | Benton Street Partners II, L.P. | CYM | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 28.600 | MMLIC | | 3 |
| .0000 | | | 98-0536199 | | | | Benton Street Partners II, L.P. | CYM | NIA | MassMutual Capital Partners LLC | Ownership | 10.400 | MMLIC | | |
| .0000 | | | 98-0536199 | | | | Benton Street Partners II, L.P. | CYM | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Braemar Energy Ventures I, L.P. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 91.300 | 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. | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 06-1614196 | | | | Cambridge Hotel, LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Cheyenne Mountain Resort LLC | DE | NIA | Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings European Core Property Fund SCSCp | LUX | NIA | MassMutual Holding LLC | Ownership/Influence | 45.300 | MMLIC | | |
| .0000 | | | | | | | Barings European Core Property Fund SCSCp | LUX | NIA | C.M. Life Insurance Company | Ownership | 2.900 | MMLIC | | |
| .0000 | | | | | | | Barings European Core Property Fund SCSCp | LUX | NIA | Barings Real Estate Advisers LLC | Management | | MMLIC | | |
| .0000 | | | 27-1701622 | | 0001481752 | | Cornerstone Core Mortgage Venture I LP | DE | NIA | MassMutual Holding LLC | Ownership/Influence | 50.000 | MMLIC | | |
| .0000 | | | 27-1701622 | | 0001481752 | | Cornerstone Core Mortgage Venture I LP | DE | NIA | Barings Real Estate Advisers LLC Massachusetts Mutual Life Insurance Company | Management | | MMLIC | | |
| .0000 | | | 45-3751572 | | 0001534877 | | Cornerstone Enhanced Mortgage Fund I LP | DE | NIA | Company | Ownership/Influence | 15.500 | MMLIC | | |
| .0000 | | | 45-3751572 | | 0001534877 | | Cornerstone Enhanced Mortgage Fund I LP | DE | NIA | Barings Real Estate Advisers LLC Massachusetts Mutual Life Insurance Company | Management | | MMLIC | | |
| .0000 | | | 20-8730751 | | | | Cornerstone Global Real Estate LP | DE | NIA | Company | Ownership/Influence | 92.300 | MMLIC | | |
| .0000 | | | 20-8730751 | | | | Cornerstone Global Real Estate LP | DE | NIA | C.M. Life Insurance Company | Ownership | 7.600 | MMLIC | | |
| .0000 | | | 20-8730751 | | | | Cornerstone Global Real Estate LP | DE | NIA | Barings Real Estate Advisers LLC | Management | | MMLIC | | |
| .0000 | | | 36-4770946 | | 0001590049 | | Cornerstone High Yield Venture LP | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 50.000 | MMLIC | | |
| .0000 | | | 36-4770946 | | 0001590049 | | Cornerstone High Yield Venture LP | DE | NIA | Barings Real Estate Advisers LLC | Management | | MMLIC | | |
| .0000 | | | 20-5578089 | | | | Barings Core Property Fund LP | DE | NIA | MassMutual Holding LLC | Ownership/Influence | 10.400 | MMLIC | | |
| .0000 | | | 20-5578089 | | | | Barings Core Property Fund LP | DE | NIA | Barings Real Estate Advisers LLC Massachusetts Mutual Life Insurance Company | Management | | MMLIC | | |
| .0000 | | | 27-0547156 | | | | Cornerstone Real Estate Fund VIII LP | DE | NIA | Company | Ownership/Influence | 6.800 | MMLIC | | |
| .0000 | | | 27-0547156 | | | | Cornerstone Real Estate Fund VIII 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 | 24.700 | MMLIC | | |
| .0000 | | | 46-5432619 | | | | Cornerstone Real Estate Fund X LP | DE | NIA | C.M. Life Insurance Company | Ownership | 2.800 | MMLIC | | |
| .0000 | | | 46-5432619 | | | | Cornerstone Real Estate Fund X LP | DE | NIA | Barings Real Estate Advisers LLC Massachusetts Mutual Life Insurance Company | Management | | MMLIC | | |
| .0000 | | | 46-5437441 | | | | Barings/LAZ Parking Fund LP | DE | NIA | Company | Ownership/Influence | 99.100 | MMLIC | | |
| .0000 | | | 46-5437441 | | | | Barings/LAZ Parking Fund LP | DE | NIA | Barings Real Estate Advisers LLC | Management | | MMLIC | | |
| .0000 | | | | 3981641 | | | Duchess VI CLO B.V. | GBR | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | 4007502 | | | Duchess VII CLO B.V. | GBR | NIA | Barings LLC | Influence | | MMLIC | | |

STATEMENT AS OF JUNE 30, 2017 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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|------------|------------|-------------------|------------|--------------|------------|--|--|----------------------|----------------------------------|--|--|--|--|----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | 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 | | | 20-3887968 | | | | E-Wise Land Venture LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 80-0691253 | | 0001517196 | | Gateway Mezzanine Partners I, L.P. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 72.500 | MMLIC | | |
| .0000 | | | 80-0691253 | | 0001517196 | | Gateway Mezzanine Partners I, L.P. | DE | NIA | C.M. Life Insurance Company | Ownership | 7.700 | MMLIC | | |
| .0000 | | | 80-0691253 | | 0001517196 | | Gateway Mezzanine Partners I, L.P. | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 90-0991195 | | 0001597511 | | Gateway Mezzanine Partners II LP | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 43.600 | MMLIC | | |
| .0000 | | | 90-0991195 | | 0001597511 | | Gateway Mezzanine Partners II LP | DE | NIA | C.M. Life Insurance Company | Ownership | 5.400 | MMLIC | | |
| .0000 | | | 90-0991195 | | 0001597511 | | Gateway Mezzanine Partners II LP | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 37-1708623 | | 0001565779 | | Great Lakes III, L.P. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 35.700 | MMLIC | | |
| .0000 | | | 37-1708623 | | 0001565779 | | Great Lakes III, L.P. | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 38-4032059 | | | | JPMDB Commercial Mortgage Securities Trust 2017-C5 | NY | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 20-3887968 | | | | Kazwell Realty Partners LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 46-4255307 | | | | Marco Hotel 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 | | | 26-3799762 | | | | MML O'Hare Hotel LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 20-3887968 | | | | Oakley Grove Development LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 20-3887968 | | | | Old Pasco Properties LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 75-2901061 | | | | Reston Arboretum LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 30-0713071 | | | | Riva Portland LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Rockall CLO B.V. | GBR | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | 54-2055778 | | | | Rockville Town Center LLC | VA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 46-5491311 | | | | Seattle 1415 Hotel Owner LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Sedona TFMP Land LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 20-8856877 | | 0001409910 | | Somerset Special Opportunities Fund L.P. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 64.800 | MMLIC | | |
| .0000 | | | 20-8856877 | | 0001409910 | | Somerset Special Opportunities Fund L.P. | DE | NIA | C.M. Life Insurance Company | Ownership | 3.000 | MMLIC | | |
| .0000 | | | 20-8856877 | | 0001409910 | | Somerset Special Opportunities Fund L.P. | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 04-1590850 | | | | South Myrtle Monrovia MM LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 20-3887968 | | | | South Pasco Properties LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 30-0336246 | | 0001345379 | | Tower Square Capital Partners II, L.P. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 28.300 | MMLIC | | |
| .0000 | | | 30-0336246 | | 0001345379 | | Tower Square Capital Partners II, L.P. | DE | NIA | C.M. Life Insurance Company | Ownership | 4.000 | MMLIC | | |
| .0000 | | | 30-0336246 | | 0001345379 | | Tower Square Capital Partners II, L.P. | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 32-0160190 | | | | Tower Square Capital Partners II-A, L.P. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 85.000 | MMLIC | | |
| .0000 | | | 32-0160190 | | | | Tower Square Capital Partners II-A, L.P. | DE | NIA | C.M. Life Insurance Company | Ownership | 15.000 | MMLIC | | |

STATEMENT AS OF JUNE 30, 2017 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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|------------|------------|-------------------|------------|--------------|------------|--|---|-----------------------|-----------------------------------|--|--|--|--|-----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domi-ciliary Location | Relation-ship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Re-quired? (Y/N) | * |
| .0000 | | | 32-0160190 | | | | Tower Square Capital Partners II-A, L.P. | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 41-2280127 | | 0001447547 | | Tower Square Capital Partners III, L.P. | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 41-2280127 | | 0001447547 | | Tower Square Capital Partners III, L.P. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 4.900 | MMLIC | | |
| .0000 | | | 41-2280127 | | 0001447547 | | Tower Square Capital Partners III, L.P. | DE | NIA | MassMutual Holding LLC | Ownership/Influence | 15.300 | MMLIC | | |
| .0000 | | | 41-2280129 | | 0001447548 | | Tower Square Capital Partners IIIA, L.P. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 95.600 | MMLIC | | |
| .0000 | | | 41-2280129 | | 0001447548 | | Tower Square Capital Partners IIIA, L.P. | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 80-0920367 | | 0001598727 | | Tower Square Capital Partners IV-A, L.P. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 21.300 | MMLIC | | |
| .0000 | | | 80-0920367 | | 0001598727 | | Tower Square Capital Partners IV-A, L.P. | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 04-3722906 | | 0001228752 | | Tower Square Capital Partners, L.P. | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership/Influence | 35.800 | MMLIC | | |
| .0000 | | | 04-3722906 | | 0001228752 | | Tower Square Capital Partners, L.P. | DE | NIA | C.M. Life Insurance Company | Ownership | 0.500 | MMLIC | | |
| .0000 | | | 04-3722906 | | 0001228752 | | Tower Square Capital Partners, L.P. | DE | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 04-1590850 | | | | West 46th Street Hotel LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | | | | | Barings Emerging Markets Debt Blended Total Return Fund | IRL | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Emerging Markets Debt Short Duration Fund | IRL | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Emerging Markets Sovereign Debt Fund | IRL | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 27-3330830 | | 0001521404 | | Babson Capital Floating Rate Income Fund, L.P. | DE | NIA | MassMutual Holding LLC | Ownership | 0.000 | MMLIC | | |
| .0000 | | | | | | | Babson Capital Loan Strategies Master Fund LP | CYM | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Global Investment Grade Corporate Plus Fund | IRL | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 47-3758432 | | | | Barings Emerging Markets Debt Blended Total Return Fund | MA | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 47-3774453 | | | | Barings Emerging Markets Local Currency Debt Fund | MA | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 47-3790192 | | | | Barings Global High Yield Fund | MA | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Barings Greater China Equity Fund | HKG | NIA | Barings Asset Management Limited | Management | | MMLIC | | |
| .0000 | | | 47-3734770 | | | | Barings Total Return Bond Fund | MA | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 47-3801860 | | | | Barings U.S. High Yield Fund | MA | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | | | | | Gateway Mezzanine Partners I Trust | AUS | 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 | | | 56-2505390 | | | | Great Lakes LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 4.400 | MMLIC | | |
| .0000 | | | 56-2505390 | | | | Great Lakes LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 0.500 | MMLIC | | |
| .0000 | | | 46-2344300 | | | | Intermodal Holdings II LLC | DE | NIA | Barings LLC | Influence | | MMLIC | | |
| .0000 | | | | | | | Somerset Special Opportunities Master Fund LP | CYM | NIA | Barings LLC | Management | | MMLIC | | |
| .0000 | | | 04-1590850 | | | | Wood Creek Venture Fund LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 40.000 | MMLIC | | |
| .0000 | | | 20-2548283 | | | | 12-18 West 55th Street Predevelopment, LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 89.200 | MMLIC | | |
| .0000 | | | 20-2548283 | | | | 12-18 West 55th Street Predevelopment, LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 7.800 | MMLIC | | |
| .0000 | | | 36-4823011 | | | | 50 Liberty LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 46.100 | MMLIC | | |

STATEMENT AS OF JUNE 30, 2017 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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|------------|------------|-------------------|------------|--------------|-----|--|---|----------------------|----------------------------------|--|--|--|--|----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | 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 | | | 36-4823011 | | | | 50 Liberty LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 4.600 | MMLIC | | |
| .0000 | | | 80-0948028 | | | | One Harbor Shore LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 32.300 | MMLIC | | |
| .0000 | | | 80-0948028 | | | | One Harbor Shore LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 3.200 | MMLIC | | |
| .0000 | | | 81-4382111 | | | | Budapester Strasse LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 04-1590850 | | | | CHC/RFP VI Core LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 95-4207717 | | | | Cornerstone California Mortgage Fund I LLC | CA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 95-4207717 | | | | Cornerstone California Mortgage Fund II LLC | CA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 56-2630592 | | | | Cornerstone Fort Pierce Development LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 84.400 | MMLIC | | |
| .0000 | | | 56-2630592 | | | | Cornerstone Fort Pierce Development LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 5.600 | MMLIC | | |
| .0000 | | | 45-2632610 | | | | Cornerstone Permanent Mortgage Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 61-1750537 | | | | Cornerstone Permanent Mortgage Fund II | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 35-2531693 | | | | Cornerstone Permanent Mortgage Fund III | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 61-1793735 | | | | Cornerstone Permanent Mortgage Fund IV | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 46-5001122 | | | | CREA 330 Third LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.900 | MMLIC | | |
| .0000 | | | 46-5001122 | | | | CREA 330 Third LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 0.100 | MMLIC | | |
| .0000 | | | 46-4367364 | | | | CREA FMF Nashville LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 26-2399532 | | | | CREA/LYON West Gateway, LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 54.000 | MMLIC | | |
| .0000 | | | 26-2399532 | | | | CREA/LYON West Gateway, LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 6.000 | MMLIC | | |
| .0000 | | | 81-0890084 | | | | CREA Madison Member LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 20-0348173 | | | | CREA/PPC Venture LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 93.400 | MMLIC | | |
| .0000 | | | 20-0348173 | | | | CREA/PPC Venture LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 6.600 | MMLIC | | |
| .0000 | | | 82-1563809 | | | | CCB Montford Park LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 75.200 | MMLIC | | |
| .0000 | | | 82-1563809 | | | | CCB Montford Park LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 4.800 | MMLIC | | |
| .0000 | | | 26-1611591 | 3956836 | | | Fallon Cornerstone One MPD LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 67.100 | MMLIC | | |
| .0000 | | | 26-1611591 | 3956836 | | | Fallon Cornerstone One MPD LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 6.600 | MMLIC | | |
| .0000 | | | 20-3347091 | | | | Fan Pier Development LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 58.500 | MMLIC | | |
| .0000 | | | 20-3347091 | | | | Fan Pier Development LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 5.800 | MMLIC | | |
| .0000 | | | 46-3880526 | | | | Farrington London Holdings LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 94.500 | MMLIC | | |
| .0000 | | | 46-3880526 | | | | Farrington London Holdings LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 5.500 | MMLIC | | |
| .0000 | | | | | | | Infinity SCD Ltd | GBR | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 4.200 | MMLIC | | |
| .0000 | | | 20-4819358 | | | | Johnston Groves LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 57.200 | MMLIC | | |
| .0000 | | | 81-5360103 | | | | Landmark Manchester Holdings LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |

STATEMENT AS OF JUNE 30, 2017 OF THE MML Bay State Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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|------------|------------|-------------------|------------|--------------|------------|--|--|-----------------------|-----------------------------------|--|--|--|--|-----------------------------------|----|
| Group Code | Group Name | NAIC Company Code | ID Number | Federal RSSD | CIK | Name of Securities Exchange if Publicly Traded (U.S. or International) | Names of Parent, Subsidiaries Or Affiliates | Domi-ciliary Location | Relation-ship to Reporting Entity | Directly Controlled by (Name of Entity/Person) | Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) | If Control is Ownership Provide Percentage | Ultimate Controlling Entity(ies)/Person(s) | Is an SCA Filing Re-quired? (Y/N) | * |
| .0000 | | | 81-2871333 | | | | MM Chatham Office LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 83.400 | MMLIC | | |
| .0000 | | | 81-2871333 | | | | MM Chatham Office LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 16.600 | MMLIC | | |
| .0000 | | | | | | | Salomon Brothers Commercial Mortgage Trust 2001-MM | DE | NIA | Barings Real Estate Advisers LLC | Influence | | MMLIC | | |
| .0000 | | | 27-2977720 | | | | Sawgrass Village Shopping Center LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 84.200 | MMLIC | | |
| .0000 | | | 27-2977720 | | | | Sawgrass Village Shopping Center LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 15.800 | MMLIC | | |
| .0000 | | | | | | | Ten Fan Pier Boulevard LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 91.000 | MMLIC | | |
| .0000 | | | | | | | Ten Fan Pier Boulevard LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 9.000 | MMLIC | | |
| .0000 | | | 81-5273574 | | | | Three PW Office Holding LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 95.000 | MMLIC | | |
| .0000 | | | 35-2484550 | | | | Twenty Two Liberty LLC | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 59.200 | MMLIC | | |
| .0000 | | | 35-2484550 | | | | Twenty Two Liberty LLC | MA | NIA | C.M. Life Insurance Company | Ownership | 5.900 | MMLIC | | |
| .0000 | | | 45-4606547 | | | | UK LIW Manager LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 1.000 | MMLIC | | |
| .0000 | | | 45-4606547 | | | | UK LIW Member LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 99.000 | MMLIC | | |
| .0000 | | | 45-5401109 | | | | Washington Gateway Apartments Venture LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 92.000 | MMLIC | | |
| .0000 | | | 45-5401109 | | | | Washington Gateway Apartments Venture LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 4.800 | MMLIC | | |
| .0000 | | | 20-2970495 | | | | Waterford Development Associates | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 90.000 | MMLIC | | |
| .0000 | | | 47-1993493 | | | | Waterloo London Holdings LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 46-3122029 | | | | WeHo Domain LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 77.400 | MMLIC | | |
| .0000 | | | 46-3122029 | | | | WeHo Domain LLC | DE | NIA | C.M. Life Insurance Company | Ownership | 12.600 | MMLIC | | |
| .0000 | | | 81-1552222 | | | | Willowood Lakeside Master LLC | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 50.000 | MMLIC | | |
| .0000 | | | 20-5481477 | | | | Ygnatio Valley Funding | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 90.000 | MMLIC | | |
| .0000 | | | 45-3168892 | | | | MassMutual Barings Dynamic Allocation Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 51-0529328 | | 0000927972 | | MassMutual Premier Main Street Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 26-3229251 | | 0000927972 | | MassMutual Premier Strategic Emerging Markets Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 04-3277550 | | 0000927972 | | MassMutual Premier Value Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 96.400 | MMLIC | | |
| .0000 | | | 14-1980900 | | 0000916053 | | MassMutual Select Diversified International Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 01-0821120 | | 0000916053 | | MassMutual Select Diversified Value Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 04-3512593 | | 0000916053 | | MassMutual Select Fundamental Growth Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 04-3513019 | | 0000916053 | | MassMutual Select Large Cap Value Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 18.000 | MMLIC | | |
| .0000 | | | 42-1710935 | | 0000916053 | | MassMutual Select Mid-Cap Value Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 79.700 | MMLIC | | |

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STATEMENT AS OF JUNE 30, 2017 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 | | | 02-0769954 | | 0000916053 | QQ | MassMutual Select Small Capital Value Equity Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 12.400 | MMLIC | | |
| .0000 | | | 04-3584140 | | 0000916053 | QQ | MassMutual Select Small Company Value Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 17.700 | MMLIC | | |
| .0000 | | | 46-4257056 | | 0000067160 | | MML Series International Equity Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 47-3517233 | | 0001317146 | | MML Series II Asset Momentum Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 100.000 | MMLIC | | |
| .0000 | | | 47-3529636 | | 0001317146 | | MML Series II Dynamic Bond Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 47-3544629 | | 0001317146 | | MML Series II Equity Rotation Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 97.400 | MMLIC | | |
| .0000 | | | 47-3559064 | | 0001317146 | | MML Series II Special Situations Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 98.200 | MMLIC | | |
| .0000 | | | 46-3289207 | | 0000916053 | | MassMutual RetireSMART 2055 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 24.700 | MMLIC | | |
| .0000 | | | 47-5326235 | | 0000916053 | | MassMutual RetireSMART 2060 Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 95.400 | MMLIC | | |
| .0000 | | | 45-1618155 | | 0000916053 | | MassMutual RetireSMART Conservative Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 45-1618222 | | 0000916053 | | MassMutual RetireSMART Growth Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 45-1618262 | | 0000916053 | | MassMutual RetireSMART Moderate Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 45-1618046 | | 0000916053 | | MassMutual RetireSMART Moderate Growth Fund | MA | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | 93-6305075 | | | | Oppenheimer Developing Markets Fund | DE | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 0.000 | MMLIC | | |
| .0000 | | | | | | | Oppenheimer Developing Markets Equity UCITS | IRL | NIA | Massachusetts Mutual Life Insurance Company | Ownership | 32.700 | MMLIC | | |
| .0000 | | | | | | | Oppenheimer Developing Markets Equity UCITS | IRL | NIA | OppenheimerFunds, Inc. | Management | | MMLIC | | |
| .0000 | | | | | | | Oppenheimer Emerging Markets Innovators UCITS | IRL | NIA | OppenheimerFunds, Inc. | Management | | MMLIC | | |
| .0000 | | | 81-3492794 | | | | Oppenheimer ESG Revenue ETF | DE | NIA | OppenheimerFunds, Inc. | Management | | MMLIC | | |
| .0000 | | | | | | | Oppenheimer Global Equity UCITS | IRL | NIA | OppenheimerFunds, Inc. | Management | | MMLIC | | |
| .0000 | | | 81-3480754 | | | | Oppenheimer Global ESG Revenue ETF | DE | NIA | OppenheimerFunds, Inc. | Management | | MMLIC | | |
| .0000 | | | 47-3676235 | | | | Oppenheimer Global Multi-Asset Growth Fund | DE | NIA | OppenheimerFunds, Inc. | Management | | MMLIC | | |
| .0000 | | | 47-1714929 | | | | Oppenheimer Global Multi-Asset Income Fund | DE | NIA | OppenheimerFunds, Inc. | Management | | MMLIC | | |
| .0000 | | | | | | | Oppenheimer Global Value Equity UCITS | IRL | NIA | OppenheimerFunds, Inc. | Management | | MMLIC | | |
| .0000 | | | 81-3136071 | | | | Oppenheimer International Growth & Income Fund | DE | NIA | OppenheimerFunds, Inc. | Management | | MMLIC | | |
| .0000 | | | 81-1080638 | | | | Oppenheimer Macquarie Global Infrastructure Fund | DE | NIA | OppenheimerFunds, Inc. | Management | | MMLIC | | |

| Asterisk | Explanation |
|----------|---|
| 1 | Massachusetts Mutual Life Insurance Company owns .52% of the affiliated debt of Jefferies Finance LLC |
| 2 | Debt investors own 3.6% and includes only Great Lakes III, L.P. |
| 3 | Partnership investors own 99% and include Babson Capital Loan Strategies Fund, L.P. |
| 4 | Debt investors own 8.7% and includes only Babson Capital Loan Strategies Fund, L.P. |
| 5 | Debt investors own 4.3% and includes only Great Lakes III, L.P. |

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STATEMENT AS OF JUNE 30, 2017 OF THE MML Bay State Life Insurance Company

| Asterisk | Explanation |
|----------|--|
| 6 | Debt investors own 5.8% and includes only Great Lakes III, L.P. |
| 7 | Debt investors own 2.0% and includes only Great Lakes III, L.P. |
| 8 | Debt investors own 4.3% 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.

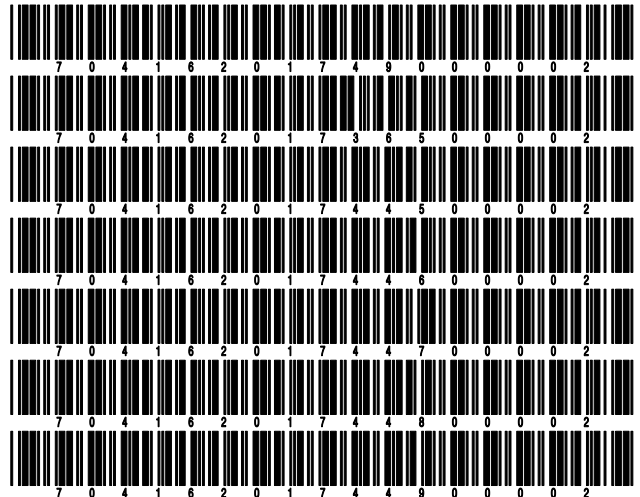
| | Response |
|--|----------|
| 1. Will the Trusteed Surplus Statement be filed with the state of domicile and the NAIC with this statement? | NO |
| 2. Will the Medicare Part D Coverage Supplement be filed with the state of domicile and the NAIC with this statement? | NO |
| 3. Will the Reasonableness 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 |

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]



NONE

STATEMENT AS OF JUNE 30, 2017 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 | 4,007,088 | 5,847,458 |
| 2. Cost of acquired: | | |
| 2.1 Actual cost at time of acquisition | | |
| 2.2 Additional investment made after acquisition | 4,700 | 2,992 |
| 3. Capitalized deferred interest and other | | |
| 4. Accrual of discount | 426 | 1,411 |
| 5. Unrealized valuation increase (decrease) | | |
| 6. Total gain (loss) on disposals | | |
| 7. Deduct amounts received on disposals | 481,751 | 1,832,747 |
| 8. Deduct amortization of premium and mortgage interest points and commitment fees | 4,460 | 12,026 |
| 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) | 3,526,003 | 4,007,088 |
| 12. Total valuation allowance | | |
| 13. Subtotal (Line 11 plus Line 12) | 3,526,003 | 4,007,088 |
| 14. Deduct total nonadmitted amounts | | |
| 15. Statement value at end of current period (Line 13 minus Line 14) | 3,526,003 | 4,007,088 |

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 | 310,216,806 | 222,828,946 |
| 2. Cost of bonds and stocks acquired | 18,740,192 | 136,043,421 |
| 3. Accrual of discount | 583,710 | 498,623 |
| 4. Unrealized valuation increase (decrease) | (16,100) | (29,573) |
| 5. Total gain (loss) on disposals | (13,359) | 128,413 |
| 6. Deduct consideration for bonds and stocks disposed of | 15,939,281 | 48,766,601 |
| 7. Deduct amortization of premium | 249,450 | 477,316 |
| 8. Total foreign exchange change in book/adjusted carrying value | | |
| 9. Deduct current year's other than temporary impairment recognized | 41,350 | 9,107 |
| 10. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9) | 313,281,168 | 310,216,806 |
| 11. Deduct total nonadmitted amounts | | |
| 12. Statement value at end of current period (Line 10 minus Line 11) | 313,281,168 | 310,216,806 |

STATEMENT AS OF JUNE 30, 2017 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) | 223,950,030 | 7,976,207 | 5,078,401 | (372,977) | 223,950,030 | 226,474,859 | | 248,205,661 |
| 2. NAIC 2 (a) | 155,526,284 | 350,891,215 | 371,761,134 | 678,664 | 155,526,284 | 135,335,029 | | 120,960,709 |
| 3. NAIC 3 (a) | 2,023,846 | | 102,706 | (3,940) | 2,023,846 | 1,917,200 | | 3,438,712 |
| 4. NAIC 4 (a) | 671,902 | 188,607 | | (2,121) | 671,902 | 858,388 | | 1,296,948 |
| 5. NAIC 5 (a) | 763,966 | | 521,006 | (3,481) | 763,966 | 239,479 | | 782,227 |
| 6. NAIC 6 (a) | 518,681 | | | (35,001) | 518,681 | 483,680 | | 526,941 |
| 7. Total Bonds | 383,454,709 | 359,056,029 | 377,463,247 | 261,144 | 383,454,709 | 365,308,635 | | 375,211,198 |
| 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 | 383,454,709 | 359,056,029 | 377,463,247 | 261,144 | 383,454,709 | 365,308,635 | | 375,211,198 |

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

NAIC 1 \$; NAIC 2 \$52,027,467 ; NAIC 3 \$ NAIC 4 \$; NAIC 5 \$; NAIC 6 \$

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SCHEDULE DA - PART 1

Short-Term Investments

| | 1 Book/Adjusted Carrying Value | 2 Purchase Value | 3 Cost | 4 Interest Collected Year-to-Date | 5 Paid for Accrued Interest Year-to-Date |
|----------------|--------------------------------------|------------------------|-----------|---|---|
| 9199999 Totals | | | | | |

NONE

SCHEDULE DA - VERIFICATION

Short-Term Investments

| | 1 Year To Date | 2 Prior Year Ended December 31 |
|---|-------------------|--------------------------------------|
| 1. Book/adjusted carrying value, December 31 of prior year | | 4,995,929 |
| 2. Cost of short-term investments acquired | | 8,472,961 |
| 3. Accrual of discount | | 29,971 |
| 4. Unrealized valuation increase (decrease) | | |
| 5. Total gain (loss) on disposals | | 308 |
| 6. Deduct consideration received on disposals | | 13,499,169 |
| 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) | | |
| 11. Deduct total nonadmitted amounts | | |
| 12. Statement value at end of current period (Line 10 minus Line 11) | | |

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

NONE

Schedule DB - Part B - Verification - Futures Contracts

NONE

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

NONE

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

NONE

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

NONE

SCHEDULE E - VERIFICATION

(Cash Equivalents)

| | 1 | 2 |
|---|---------------|---------------------------------|
| | Year To Date | Prior Year Ended December 31 |
| 1. Book/adjusted carrying value, December 31 of prior year | 64,994,390 | 55,082,304 |
| 2. Cost of cash equivalents acquired | 989,268,784 | 1,147,813,746 |
| 3. Accrual of discount | 334,797 | 323,001 |
| 4. Unrealized valuation increase (decrease) | | |
| 5. Total gain (loss) on disposals | 14 | (464) |
| 6. Deduct consideration received on disposals | 1,002,570,518 | 1,138,224,197 |
| 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) | 52,027,467 | 64,994,390 |
| 11. Deduct total nonadmitted amounts | | |
| 12. Statement value at end of current period (Line 10 minus Line 11) | 52,027,467 | 64,994,390 |