



# HOLYOKE

 Annual Statement

2017 



Annual Statement for the Year Ended December 31, 2017  
of the Conditions and Affairs of HOLYOKE RETIREMENT SYSTEM

Organized under the Laws of the Commonwealth of Massachusetts to the Public Employee Retirement Administration Commission

Date of Certificate July 1, 1937 Effective Date July 1, 1937

Administrative Office

20 Korean Veterans Plaza, Room 207 Holyoke, MA 01040 (413) 322-5590

We, the undersigned, members of the Board of Retirement of HOLYOKE certify under the penalties of perjury, that we are the official board members of said retirement system, and that on the thirty-first day of December last all of the here-in described assets were the absolute property of said retirement systems, free and clear from any liens or claims thereon, except as stated, and the following statements, with the schedules and explanations therein contained, annexed, or referred to, are a full and correct exhibit of all the assets, liabilities, income and disbursements, changes in fund balances and of the conditions and affairs of the said retirement system on the said thirty-first day of December last, and for the year ended on that date according to the best of our information, knowledge and belief, respectively.

BOARD OF RETIREMENT

\*Chairman

Ex-Officio Member

Bellamy Schmidt

  
(Signature)

Elected Member

Term Expires 6/30/2020

Anthony Dulude

  
(Signature)

Elected Member

Term Expires 6/1/2019

John T. McCarthy\*

  
(Signature)

Appointed Member

Term Expires 1/2/2020

Rory Casey

  
(Signature)

Appointed Member

Term Expires 12/31/2020

Michele Aubrey

  
(Signature)

INVESTMENT MANAGERS

Royal Bank of Canada

Address: 50 South Sixth St., Minneapolis, MN 55402

Invesco Management

Address: 101 Federal Street, Boston, MA 02110

Fidelity /Pyramis

Address: 900 Salem Street, MZOT3N1, Smithfield, RI 02917

Fidelity/Long Wharf

Address: One Federal Street, Boston, MA 02110

Putnam Investments

Address: 1 Post Office Square, Boston, MA 02109

The Boston Company

Address: 1 Boston Place, Boston, MA 02108-4402

Intercontinental Real Estate Corp

Address: 1270 Soldiers Field Road, Boston, MA 0213501003

American Realty Advisors

Address: 801 N. Brand Blvd. Suite 800, Glendale, CA 91203

QFI Institutional

Address: 10 St. James Ave. Boston, MA 02116

Lazard Asset Management

Address: 30 Rockefeller Plaza, NY, NY 10112-6300

TA Associates Realty

Address: 28 State Street, Boston, MA 02109

LPL Financial (BlackRock)

Address: 1001 Ave of the Americas, Suite 1000, New York, NY 10018

State Street Global Advisors

Address: One Lincoln Street, 33<sup>rd</sup> Floor, Boston, MA 02111

Mesirow Financial Private Equity

Address: 350 N. Clark Street, Chicago, IL 60654

Constitution Capital Partners

Address: 300 Brickstone Square, Andover, MA 01810

Brandywine Global Invest. Mgmt.

Address: 2929 Arch Street, 8<sup>th</sup> Floor, Philadelphia, PA 19104

Seizert Capital Partners

Address: 185 Oakland Avenue, Suite 100, Birmingham, MI 48009

PRIM Board

Address: 84 State Street, Suite 250, Boston, MA 02109

Oberweis Asset Management

Address: 3333 Warrenville Ave, Suite 500, Lisle, IL 60532

Wasatch Investments

Address: 150 Social hall Ave, 4<sup>th</sup> Fl, Salt Lake City, UT 84111

Industry Capital

Address: 1 Sansome St, 15<sup>th</sup> Floor, San Francisco, CA 94104

TerraCap Management

Address: 2341 Walden Center, Suite 300, Bonita Springs, FL 34134

Aberdeen Asset Management

Address: 1735 Market Street, Philadelphia, PA 19103

Acadian Asset Management

Address: 260 Franklin Street, Boston, MA 02110

Algert Asset Management

Address: One Maritime Plaza, San Francisco, CA 94111

LMCG Investments

Address: 200 Clarendon Street, 28<sup>th</sup> Floor, Boston, MA 02116

INVESTMENT CONSULTANT

Segal Advisors, Inc.\*

Address: 116 Huntington Avenue, Boston, MA 02116

\*Reduced capacity effective 8/31/2009

Annual Statement of the HOLYOKE Retirement System for the year ended December 31, 2017

ANNUAL STATEMENT BALANCE TESTS

1. ASSET BALANCE

Assets Previous Year	261,391,259.24
Income Current Year	67,610,101.04
Disbursements Current Year	<u>(29,414,215.95)</u>
Assets Current Year	299,587,144.33

2. ASSET DIFFERENCE

Assets Current Year	299,587,144.33
Assets Previous Year	<u>(261,391,259.24)</u>
Difference	38,195,885.09

3. INCOME DIFFERENCE

Income Current Year	67,610,101.04
Disbursements Current Year	<u>(29,414,215.95)</u>
Difference	38,195,885.09

4. FUND CHANGE DIFFERENCE - *Add interfund transfer credits and debits respectively to Income and Disbursement activities.*

Total Fund Change Credits Current Year	75,724,252.96
Total Fund Change Debits Current Year	<u>(37,528,367.87)</u>
Difference	38,195,885.09

NOTE: The difference as a result of tests 2, 3, and 4 should be the same.

**Annual Statement of the HOLYOKE Retirement System for the year ended December 31, 2017**

**ASSETS & LIABILITIES**

	<u>2017</u>	<u>2016</u>	<u>2015</u>
1. 1040 Cash	4,863,011.62	5,618,599.92	12,359,489.07
2. 1100 Short Term Investments			
3. 1180 Fixed Income Securities*			
4. 1170 Equities			
5. 1101 Pooled Short Term Funds			
6. 1172 Pooled Domestic Equities	109,686,870.77	93,335,265.91	74,411,995.66
7. 1173 Pooled International Equity Funds	78,290,214.06	51,022,076.27	46,553,560.83
8. 1174 Pooled Global Equity Funds			
9. 1181 Pooled Domestic Fixed Income Funds	31,187,419.00	24,995,016.00	33,611,200.00
10. 1182 Pooled International Fixed Income Funds			
11. 1183 Pooled Global Fixed Income Funds			
12. 1193 Pooled Alternative Investments	40,192,271.46	42,480,043.93	43,083,644.64
13. 1194 Pooled Real Estate Funds	26,275,911.11	34,892,770.16	25,887,518.48
14. 1195 Pooled Domestic Balanced Funds			
15. 1196 Pooled International Balanced Funds			
16. 1197 Hedge Funds			2,117,950.93
17. 1198 PRIT Cash			
18. 1199 PRIT Fund			
19. 1891 Principal Adjustment Account			
20. 1550 Interest Due and Accrued			
21. 1398 Accounts Receivable (A)	9,097,946.31	9,054,377.67	9,212,247.98
22. 2020 Accounts Payable (A)	<u>(7,500.00)</u>	<u>(6,890.62)</u>	<u>(18,847.80)</u>
TOTAL	299,586,144.33	261,391,259.24	247,218,759.79

**FUNDS**

1. 3293 3293-Annuity Savings Fund	57,074,824.54	56,790,183.88	55,033,781.24
2. 3294 3294-Annuity Reserve Fund	20,317,509.65	19,355,228.86	19,859,270.92
3. 3295 3295-Military Fund	85,130.71	85,045.66	93,950.09
4. 3296 3296-Pension Fund	8,255,683.14	8,674,404.03	7,819,651.32
5. 3298 3298-Expense Fund			
6. 3297 3297-Pension Reserve Fund	<u>213,853,996.29</u>	<u>176,486,396.81</u>	<u>164,412,106.22</u>
TOTAL	<u>299,587,144.33</u>	<u>261,391,259.24</u>	<u>247,218,759.79</u>

<b>TOTAL ASSETS AT MARKET VALUE</b>	<u>299,587,144.33</u>	<u>261,391,259.24</u>	<u>247,218,759.79</u>
-------------------------------------	-----------------------	-----------------------	-----------------------

(A) Specific detail for Accounts Receivable and Accounts Payable are to be disclosed on Schedule A

Annual Statement for the HOLYOKE Retirement System for the year ended December 31, 2017

	Balance December 31 Prior Year	Receipts	Interfund Transfers	Disbursements	Balance December 31 Current Year
Annuity Savings Fund	56,790,183.88	5,782,344.63	(4,329,196.89)	1,168,507.08	57,074,824.54
Annuity Reserve Fund	19,355,228.86	606,394.66	4,310,146.18	3,954,260.05	20,317,509.65
Pension Fund	8,674,404.03	17,794,918.89	3,804,005.74	22,017,645.52	8,255,683.14
Military Service Fund	85,045.66	85.05			85,130.71
Expense Fund	0.00	2,273,803.30		2,273,803.30	0.00
Pension Reserve Fund	176,486,396.81	41,152,554.51	(3,784,955.03)		213,853,996.29
<b>TOTAL ALL FUNDS</b>	<b>261,391,259.24</b>	<b>67,610,101.04</b>	<b>0.00</b>	<b>29,414,215.95</b>	<b>299,587,144.33</b>

List below all transfers

Transfer from 3293 to	3294	4,310,146.18	on account of Current Year Retirees
Transfer from 3293 to	3297	25,219.97	on account of inactive employees over 10 years
Transfer from 3297 to	3296	3,810,175.00	on account of Appropriation FY 2017
Transfer from 3296 to	3293	6,169.26	WC Credit

Annual Statement of the HOLYOKE Retirement System for the year ended December 31, 2017

RECEIPTS

	<u>2017</u>	<u>2016</u>	<u>2015</u>
<b>1. Annuity Savings Fund:</b>			
(a) 4891 Members Deductions	5,351,338.30	5,242,695.56	5,095,722.68
(b) 4892 Transfers from Other Systems	302,045.15	451,752.85	266,506.54
(c) 4893 Member Make Up Payments	30,283.07	1,606.62	6,373.10
(d) 4900 Member Payments from Rollovers	17,945.64	3,989.81	20,184.66
(e) Investment Income credited to Member Accounts	<u>80,732.47</u>	<u>72,700.73</u>	<u>64,385.52</u>
<b>Subtotal</b>	5,782,344.63	5,772,745.57	5,453,172.50
<b>2. Annuity Reserve Fund:</b>			
(a) Investment Income Credited to Annuity Reserve Fund	<u>606,394.66</u>	<u>581,757.48</u>	<u>595,842.09</u>
<b>Subtotal</b>	606,394.66	581,757.48	595,842.09
<b>3. Pension Fund:</b>			
(a) 4898 3(8)(c) Reimbursements from other systems	273,558.71	254,307.90	222,969.03
(b) 4899 Received from Commonwealth for COLA and Survivor Benefits	233,248.18	277,310.60	1,079,845.98
(c) 4894 Pension Fund Appropriation	17,288,112.00	17,293,030.00	17,122,641.00
(d) 4840 Workers' Compensation Settlements		9,111.51	8,000.00
(e) 4841 Recovery of Overearnings			<u>1,388.72</u>
<b>Subtotal</b>	17,794,918.89	17,833,760.01	18,434,844.73
<b>4. Military Service Fund:</b>			
(a) 4890 Contributions Received from municipality		2,465.70	2,014.32
(b) Investment Income Credited	<u>85.05</u>	<u>93.95</u>	<u>91.84</u>
<b>Subtotal</b>	85.05	2,559.65	2,106.16
<b>5. Expense Fund:</b>			
(a) 4896 Expense Fund Appropriation			
(b) Investment Income Credited to Expense Fund	<u>2,273,803.30</u>	<u>2,562,947.88</u>	<u>3,637,562.14</u>
<b>Subtotal</b>	2,273,803.30	2,562,947.88	3,637,562.14
<b>6. Pension Reserve Fund:</b>			
(a) 4897 (a) 4897-Federal Grant Reimbursement	14,949.72	14,679.72	16,942.86
(b) 4895 (b) 4895-Pension Reserve Appropriation			
(c) 4822 (c) 4822-Interest Not Refunded	8,348.69	275.44	780.88
(d) 4825 (d) 4825-Miscellaneous Income	175.31	854.98	
(e) Excess Investment Income	<u>41,129,080.79</u>	<u>16,310,998.73</u>	<u>4,960,394.03</u>
<b>Subtotal</b>	41,152,554.51	16,326,808.87	4,978,117.77
<b>TOTAL RECEIPTS</b>	67,610,101.04	43,080,579.46	33,101,645.39

Annual Statement of the HOLYOKE Retirement System for the year ended December 31, 2017

DISBURSEMENTS

	<u>2017</u>	<u>2016</u>	<u>2015</u>
<b>1. Annuity Savings Fund:</b>			
(a) 5757 Refunds to Members	444,482.69	617,229.14	605,190.01
(b) 5756 Transfers to Other Systems	<u>724,024.39</u>	<u>710,258.59</u>	<u>277,292.83</u>
<b>Subtotal</b>	<b>1,168,507.08</b>	<b>1,327,487.73</b>	<b>882,482.84</b>
<b>2. Annuity Reserve Fund:</b>			
(a) 5750 Annuities Paid	3,948,779.80	3,669,111.25	3,531,387.67
(b) 5759 Option B Refunds	<u>5,480.25</u>	<u>123,384.03</u>	<u>174,828.35</u>
<b>Subtotal</b>	<b>3,954,260.05</b>	<b>3,792,495.28</b>	<b>3,706,216.02</b>
<b>3. Pension Fund:</b>			
(a) 5751 Pensions Paid			
Regular Pension Payments	17,296,291.96	16,746,110.18	16,510,432.47
Survivor Payments	380,356.45	324,734.68	315,530.34
Ordinary Disability Payments	228,572.33	237,615.50	230,028.64
Accidental Disability Payments	2,404,484.54	2,411,136.57	2,330,509.41
Accidental Death Payments	835,989.40	769,580.61	743,549.35
Section 101 Benefits	134,340.61	150,315.05	151,810.49
(b) 5755 3(8)(c) Reimbursements to Other Systems	737,610.23	585,656.53	613,327.07
(c) 5752 COLAs Paid			
(d) 5752 Chapter 389 Beneficiary Increase Paid			
<b>Subtotal</b>	<b>22,017,645.52</b>	<b>21,225,149.12</b>	<b>20,895,187.77</b>
<b>4. Military Service Fund:</b>			
(a) 4890 Return to Municipality for Members who withdrew their funds	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
<b>Subtotal</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>5. Expense Fund:</b>			
(a) 5118 Board Member Stipend	12,000.00	12,000.00	12,000.00
(b) 5119 Salaries	281,258.46	274,250.44	270,089.78
(c) 5304 Management Fees	1,822,448.48	2,081,326.42	3,198,097.92
(d) 5305 Custodial Fees			
(e) 5307 Investment Consultant Fees	20,000.00	50,000.00	20,000.00
(f) 5308 Legal Expenses	19,446.87	12,571.87	17,890.62
(g) 5309 Medical Expense	7.40		
(h) 5310 Fiduciary Insurance	16,992.00	16,754.00	16,259.00
(i) 5311 Service Contracts	7,195.04	6,644.92	30,321.99
(j) 5312 Rent Expense			
(k) 5315 Professional Services	32,020.00	25,355.00	200.00
(l) 5316 Actuarial Services	14,000.00	20,000.00	2,500.00
(m) 5317 Accounting Services		4,900.00	6,400.00
(n) 5320 Education & Training	5,400.00	7,525.00	6,995.00
(o) 5589 Administrative Expenses	35,296.98	36,363.45	33,303.76
(p) 5599 Furniture and Equipment		1,234.99	8,663.36
(q) 5719 Travel	7,738.07	14,021.79	14,840.71
<b>Subtotal</b>	<b>2,273,803.30</b>	<b>2,562,947.88</b>	<b>3,637,562.14</b>
<b>TOTAL DISBURSEMENTS</b>	<b>29,414,215.95</b>	<b>28,908,080.01</b>	<b>29,121,448.77</b>

Annual Statement of the HOLYOKE Retirement System for the year ended December 31, 2017

INVESTMENT INCOME

	<u>2017</u>	<u>2016</u>	<u>2015</u>
Investment Income received from:			
(a) Cash (from schedule 1)	23,489.04	16,189.30	10,373.41
(b) Short Term Investments (from schedule 2)			
(c) Fixed Income Securities (from schedules 3A and 3C)			
(d) Equities (from schedules 4A and 4C)			
(e) Pooled Funds (from schedule 5)	1,661,364.29	1,885,517.53	1,491,254.13
(f) Litigation	487,635.69		
(g) Commission Recapture			
<b>4821 TOTAL INVESTMENT INCOME</b>	<u>2,172,489.02</u>	<u>1,901,706.83</u>	<u>1,501,627.54</u>
<b>Plus:</b>			
4884 Realized Gains (Profits)	12,476,171.07	5,107,598.53	4,894,126.20
4886 Unrealized Gains (Inc. in Market Value)	44,842,053.29	43,202,999.82	40,627,085.25
1550 Interest Due and Accrued on Fixed Income Securities-Current Year			
	<u>57,318,224.36</u>	<u>48,310,598.35</u>	<u>45,521,211.45</u>
<b>Less:</b>			
4823 Paid Accrued Interest on Fixed Income Securities			
4885 Realized Losses	4,106,850.13	3,308,142.49	1,374,830.18
4887 Unrealized Losses (Decrease in Market Value)	11,293,766.98	27,375,663.92	36,389,733.19
1550 Interest Due and Accrued on Fixed Inc. Securities-Prior Year			
<b>NET INVESTMENT INCOME</b>	<u>44,090,096.27</u>	<u>19,528,498.77</u>	<u>9,258,275.62</u>
Income Required:			
Annuity Savings Fund (from Supplementary Schedule)	80,732.47	72,700.73	64,385.52
Annuity Reserve Fund	606,394.66	581,757.48	595,842.09
Expense Fund	2,273,803.30	2,562,947.88	3,637,562.14
Military Service Fund	85.05	93.95	91.84
<b>TOTAL INCOME REQUIRED</b>	<u>2,961,015.48</u>	<u>3,217,500.04</u>	<u>4,297,881.59</u>
Net Investment Income	44,090,096.27	19,528,498.77	9,258,275.62
Less: Income Required	<u>2,961,015.48</u>	<u>3,217,500.04</u>	<u>4,297,881.59</u>
<b>EXCESS INCOME TO PENSION RESERVE FUND</b>	<u>41,129,080.79</u>	<u>16,310,998.73</u>	<u>4,960,394.03</u>



Annual Statement for the HOLYOKE Retirement System for the year ended December 31, 2017

MEMBERSHIP FOR CURRENT YEAR

ACTIVE MEMBERS	Group 1	Group 2 & 4	TOTAL
Active Membership, Dec. 31 previous year	808	328	1136
Inactive Membership, Dec. 31 previous year	258	9	267
Enrolled during current year	115	21	136
Transfers between groups	0	0	0
Reinstatements of disabled members			0
<b>SUBTOTAL</b>	<b>1181</b>	<b>358</b>	<b>1539</b>
Deduct:			
Death	1	2	3
Withdrawn	89	7	96
Retirements	21	20	41
<b>SUBTOTAL</b>	<b>111</b>	<b>29</b>	<b>140</b>
Active Membership, Dec. 31 current year	808	322	1130
Inactive Membership, Dec. 31 current year	262	7	269

RETIRED MEMBERS, BENEFICIARIES & SURVIVORS

Retired, Beneficiary, and Survivor Membership, Dec. 31 previous year	581	354	935
Retirements during the year:			
Superannuation	20	15	35
Ordinary Disability	0	1	1
Accidental Disability	1	2	3
Termination Retirement Allowance	0		0
Beneficiary of Deceased Retiree	3	4	7
Survivor benefits from active membership	0	2	2
<b>SUBTOTAL</b>	<b>24</b>	<b>24</b>	<b>48</b>
Deduct:			
Deaths of retired members	20	16	36
Termination of Survivor Benefits	6	5	11
Reinstatements of disabled pensions			0
<b>SUBTOTAL</b>	<b>26</b>	<b>21</b>	<b>47</b>
Retired Membership, Dec. 31 current year			
Superannuation	469	231	700
Ordinary Disability	10	5	15
Accidental Disability	27	48	75
Termination/Waivers	7		7
Beneficiaries from accidental deaths		22	22
Beneficiaries from Section 100		2	2
Beneficiaries from Section 101	3	12	15
Beneficiaries under Option (c)	42	29	71
Option (d) Survivor Allowance	19	8	27
Section 12B Survivor Allowance	2		2
<b>Total Retired, Beneficiary, and Survivor Membership, Dec. 31 current year</b>	<b>579</b>	<b>357</b>	<b>936</b>
<b>TOTAL MEMBERSHIP</b>			
Active, Inactive, Retired, Beneficiary and Survivor, Dec. 31 current year	1649	686	2335

Annual Statement of the HOLYOKE Retirement System for year ended December 31, 2017

Schedule A: Detail of Accounts Receivable and Accounts Payable

Accounts Receivable	Amount	Original Date
4891 Members Deductions	10,829.67	2017
4892 Transfers From Other Systems	870.09	2017
4893 Member Make Up Payments and Redeposits		
4900 Member Payments from Rollovers		
4898 3(8)(c) Reimbursements from other Systems		
4899 Received from Commonwealth for COLA and Survivor Benefits	112,707.64	2017
4884 Realized Gain on Sale of Investments		
4894 Pension Fund Appropriation (Current fiscal year)	8,972,117.31	2017
4894 Pension Fund Appropriation (Previous fiscal year)		
4890 Contributions Received from municipality on a/c of military service		
4897 Federal Grant Reimbursement		
4895 Pension Reserve Appropriation		
Investments sold but funds not received		
Dividends not yet received		
5589 Reimbursement to credit card return rec'd in 2018	233.05	2017
1194 Anticipated Distribution in 2018 Intercontinental RE	1,188.55	2017
<b>TOTAL RECEIVABLES</b>	<b>9,097,946.31</b>	

Accounts Payable	Amount	Original Date
5757 Refunds to Members		
5756 Transfers to Other Systems		
5750 Annuities Paid		
5759 Option B Refunds		
5751 Pensions Paid		
5755 3(8)(c) Reimbursements to Other Systems		
5752 COLAs Paid		
5753 Chapter 389 Beneficiary Increase Paid		
4885 Realized Loss on Sale of Investments		
4890 Return to municipality for members who withdrew their funds		
5118 Board Members Stipend		
5119 Salaries		
5304 Management Fees		
5305 Custodial Fees		
5307 Investment Consultant Fees		
5308 Legal Expenses	7,500.00	2017
5309 Medical Expenses		
5310 Fiduciary Insurance		
5311 Service Contracts		
5312 Rent Expense		
5315 Professional Services		
5320 Education and Training		
5589 Administrative Expenses		
5599 Furniture and Equipment		
5719 Travel		
5829 Depreciation Expense Building		
Outstanding checks in Retiree Payroll		
<b>TOTAL PAYABLES (Must agree with page 2, line #20)</b>	<b>7,500.00</b>	

Schedule No. 1  
Annual Statement of the Holyoke Retirement System for the Year Ended December 31, 2017

Cash Account Activity During Year

\*Cash defined in ledger #1040 as Savings or Checking

Description	(A)	(B)	(C)	(D)	(E)	(F)	(G)
	Book Value at End of <u>Previous Year</u>	Total Deposits <u>This Year</u>	Income Reinvested/ Redeposited <u>Into Account</u>	Withdrawals <u>During Year</u>	Total Book Value December 31st <u>This year</u>	Cash Income Paid to System Not Reinvested or <u>Redeposited</u>	Interest Due & Accrued <u>December 31st</u>
Peoples Bank-Checking	5,618,524.92	214,206,485.67	23,489.04	214,985,563.01	4,862,936.62		
Peoples Bank-Payroll	0.00	23,017,427.08		23,017,427.08	0.00		
Petty Cash	75.00		<u>23,489.04</u>		<u>4,862,936.62</u>		
					<u>75.00</u>		
					<u>4,863,011.62</u>		

Schedule No. 5  
Annual Statement of the HOLYOKE Retirement System for the Year Ended December 31, 2017

Schedule of Pooled Funds

PERAC Ledger Number Description	(A) Market Value at End of Previous Year	(B) Total Purch. this Year At Cost	(C) Reinvested Investment Income	(D) Realized Gain	(E) Realized Loss	(F) Unrealized Gain	(G) Unrealized Loss	(H) Total Sales Redemptions Amt. Rec.	(I) Cash Dividends Distributions to System	(J) Fees Paid	(K) Cairy	Market Value at End of Year	=A+B+C+D+E +F-G-H+I-K (L)	
													(L)	(M)
1172 Laudus- Lg cap Growth	14,936,205.63	5,000,000.00				5,905,700.65				155,680.69		25,686,225.59		
1172 Boston Company Mid Cap	15,935,886.00					3,286,158.00	1,009,885.00	2,000,000.00		117,516.06		16,212,159.00		
1172 Brandywine Global Lg Cap Value	10,903,687.19	2,000,000.00				2,408,170.84	347,873.81	2,000,000.00		87,153.34		12,876,830.88		
1172 Pyramis Small Cap	12,346,400.09					2,248,824.39	333,118.18			101,962.94		14,262,106.30		
1172 Seizert Capital Lg Cap Value	10,761,218.00					2,101,152.39	189,223.18			76,544.21		12,596,603.00		
1172 SSpA Large Cap Index	12,543,101.00					2,388,427.00		3,000,000.00		9,414.44		11,931,528.00		
1172 SSpA Mid Cap Index	4,304,647.00					585,007.00	79,326.00	2,000,000.00		4,660.36		2,810,328.00		
1172 SSpA Small Cap Index	11,604,121.00					2,163,319.00	456,350.00			7,000.84		13,311,090.00		
1172 SUBTOTAL Pooled Equity	93,335,265.91	7,000,000.00	0.00	0.00	0.00	21,086,759.27	2,415,776.17	9,000,000.00	0.00	560,132.88		109,686,870.77		
1173 Aberdeen	0.00	6,000,000.00	72,022.68	195,946.21	38.89	588,636.36	263,878.81			16,375.44		6,592,687.55		
1173 Acadian	0.00	5,000,000.00				455,652.11				4,091.00		5,455,652.11		
1173 Algeri	0.00	3,000,000.00	14,142.00	35,116.00		166,764.00				10,284.00		3,205,738.00		
1173 LMCC	0.00	2,000,000.00				193,613.88	47,154.48			6,622.00		2,139,837.40		
1173 Lazard Emerging Markets	4,900,646.58	1,000,000.00	144,205.21			1,347,260.60	65,932.92	7,257,050.46		69,129.01		0.00		
1173 Oberweis Sm Cap International	2,592,349.71	500,000.00	23,388.05			1,123,323.37	23,812.32			36,534.88		4,178,713.93		
1173 OFI Emerging Markets	4,655,798.20					726,857.93		5,357,627.13		25,029.00		0.00		
1173 RBC/Polaris International	19,802,730.39	3,400,000.00	658,396.83	1,852,198.72	400.55	3,889,912.42	758,718.48			190,495.78		28,844,119.33		
1173 SSpA Emerging Markets	4,111,060.00	12,500,000.00				1,831,586.00	22,962.00	5,000,000.00		14,954.32		13,619,684.00		
1173 SSpA International	12,665,389.00	3,000,000.00				2,786,798.00	55,257.00	8,000,000.00		12,406.79		10,396,930.00		
117 Wasatch Sm Cap International	2,094,102.39	1,000,000.00	101,509.51			730,837.20	23,087.62			46,509.74		3,656,851.74		
1173 SUBTOTAL Pooled International	51,022,076.27	37,400,000.00	1,013,664.28	2,083,260.93	438.44	13,841,241.87	1,260,803.63	25,614,677.59	0.00	432,431.96	0.00	78,290,214.06		
1181 Putnam Investments Fixed Income	14,970,786.00	5,000,000.00				794,104.00	61,764.00			45,434.91		20,703,136.00		
1181 Putnam Investments High Yield	3,138,522.00					262,090.00	9,508.00			14,534.44		3,391,094.00		
1181 SSpA TIPS Index	6,885,698.00					326,855.00	119,364.00			4,184.83		7,093,189.00		
1181 SUBTOTAL Pooled Fixed Inc.	24,995,016.00	5,000,000.00	0.00	0.00	0.00	1,383,039.00	190,636.00	0.00	0.00	64,154.18		31,187,419.00		
1193 ConCap Ironsides II Co-Investment	4,659,466.06		27,880.61	1,315,349.65	1,519,478.69	1,424,949.29	2,659,749.74	2,178,545.09			(211,684.97)	1,281,589.06		
1193 ConCap Ironsides II Partnership	10,091,706.37		26,611.24	1,209,845.90		397,198.60	610,073.70	2,029,740.35		112,500.01		8,937,933.19		
1193 ConCap Ironsides III Co-Investment	18,264,941.69	1,946,402.55	260,614.85	2,610,912.96		3,977,221.41	1,888,643.04	3,927,680.30		150,000.00		20,372,252.20		
1193 ConCap Ironsides III Partnership	2,681,307.52	2,329,678.66	(29,755.28)	226,979.80		581,805.14	269,753.73			7,608.10		5,512,654.01		
1193 Invesco Bal. Risk Commodities Trust	2,625,156.29	2,500,000.00	(888.00)	872,265.00		145,462.60	347,007.86	4,911,848.35		11,762.68		0.00		
1193 Mesirow Private Equity**	4,157,466.00					87,701.00	112,504.00	874,744.00		41,625.00		4,087,873.00		
1193 SUBTOTAL Alternatives	42,480,043.93	6,776,081.21	284,665.42	6,235,353.31	1,519,478.69	6,614,338.04	5,887,732.07	13,922,558.09	0.00	315,887.69	552,555.91	40,192,271.46		
1194 American Realty	94,185.86		3,830.02	1,489.11	792.97	3,327.98	272.20			1,085.58		100,682.22		
1194 Long Wharf/FREG III	399,858.80		4,116.19	76,870.24	88,544.29	97,728.75	127,708.88	359,605.14		2,715.87		0.00		
1194 Long Wharf Fund IV	7,320,631.44		201,928.98	738,554.53		100,115.24	351,414.23	1,988,557.90		92,128.50		5,835,917.72		

=A+B+C+D+E  
+F-G-H-I-J-K  
(I)

(A) (B) (C) (D) (E) (F) (G) (H) (I) (J) (K)

PERAC Ledger Number	Description	Market Value at End of Previous Year	Total Purch. this Year A/Cost	Reinvested Investment Income	Realized Gain	Realized Loss	Unrealized Gain	Unrealized Loss	Total Sales Redemptions Amt. Rec.	Cash Dividends Distributions to System	Fees Paid	Carry	Market Value at End of Year
1194	Long Wharf Fund V	1,820,730.05	1,649,034.61	53,022.20	116,586.00	5,965.00	117,550.80	49,914.00	63,978.06	105,000.02	23,773.00	33,235.00	3,471,359.58
1194	Industry Capital	1,982,228.00		76,499.00		48,408.00	126,702.00	49,914.00	744,000.00		23,773.00		1,445,128.00
1194	Intercontinental Real Estate	259,620.00		(3,544.00)			44,761.27		252,337.27		92.00		0.00
1194	Invesco Real Estate	5,425,661.00	94,621.00	55,669.00	1,637.00	14.00	74,549.47	515,778.66	5,620,278.90		31,844.57	(173,349.18)	0.00
1194	TerraCap II Real Estate	6,156,089.01		29,949.20	887,788.46	4,081.88			1,874,971.69		55,182.23		4,777,161.59
1194	TerraCap III Real Estate	11,424,178.00		(58,691.00)	692,908.00	1,141.00	1,351,939.60	493,731.34	1,860,968.26		138,220.00	270,612.00	10,645,662.00
1194	TA Associates	9,588.00		257.00					9,845.00				0.00
1194	SUBTOTAL Pooled Real Estate	34,892,770.16	1,743,655.61	363,034.59	2,495,833.34	148,946.94	1,916,675.11	1,538,819.11	12,774,542.22	0.00	450,041.77	223,707.66	26,275,911.11

\*\*As of 8/30/2015

TOTAL		246,725,172.27	57,919,736.82	1,661,364.29	10,814,447.58	1,668,863.07	44,842,053.29	11,293,766.98	61,311,777.90	0.00	1,822,648.48	776,263.57	285,632,886.40
					1,661,723.49	2,437,987.06							
					12,476,171.07	4,106,850.13							

Schedule No. 6  
Annual Statement of the HOLYOKE Retirement System for the Year Ended December 31, 2017

Summary of Investments Owned

Category of Investment	Market Value	Interest Due and Accrued	Paid Accrued Interest on Purch. Curr Yr	Commissions Paid Curr Yr	Unrealized		Realized		Investment Income Received During Year
					Gains	Losses	Gains	Losses	
1 1040 Cash	4,863,011.62								23,489.04
2 1100 Short Term Securities									
3 1180 Fixed Income Securities									
4 1170 Equities									
5a 1101 Pooled Short Term Funds									
5b 1172 Pooled Domestic Equity	109,686,870.77				21,086,759.27	2,415,776.17			
5c 1173 Pooled International Equity	78,290,214.06				13,841,241.87	1,260,803.63	2,083,260.93	439.44	1,013,664.28
5d 1174 Pooled Global Equity									
5e 1181 Pooled Domestic Fixed Income	31,187,419.00				1,383,039.00	190,636.00			
5f 1182 Pooled International Fixed Income									
5g 1183 Pooled Global Fixed Income									
5h 1193 Pooled Alternative Investments/Priv Eq	40,192,271.46				6,614,338.04	5,887,732.07	6,505,478.48	2,342,157.77	284,665.42
5i 1194 Pooled Real Estate Funds	26,275,911.11				1,916,675.11	1,538,819.11	3,887,431.66	1,764,252.92	363,034.59
5j 1195 Pooled Domestic Balanced Funds									
5k 1196 Pooled International Balanced Funds									
5l 1197 Hedge Funds									
5m 1198 PRIT Cash									
5n 1199 PRIT Fund									
Class Action Receipts									259.68
RBC Litigation proceeds									487,376.01
TOTAL	290,495,698.02	0.00	0.00	0.00	44,842,053.29	11,293,766.98	12,476,171.07	4,106,850.13	2,172,489.02

Schedule No. 7

Annual Statement for the HOLYOKE Retirement System for the year ended December 31, 2017  
Summary of Investment Related Fees

Manager/Vendor	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Total Paid or Accrued in 2017	Payment Method**	Market Value
5304 Management Fees							
1. Aberdeen			656.49	15,718.95	16,375.44	C	6,592,687.55
2. Acadian				4,091.00	4,091.00	C	5,455,652.11
3. Algert		269.38	2,500.00	7,784.00	10,284.00	N	3,205,738.00
4. American Realty	264.88		273.68	277.64	1,085.58	N	100,682.22
5. Boston Company	30,613.49	31,342.21	26,941.36	28,619.00	117,516.06	C	16,212,159.00
6. Brandywine Global Investments	19,081.45	23,189.02	23,553.49	21,329.38	87,153.34	N	12,876,830.88
7. Constitution Capital Co-Investment II	11,119.27	(11,119.27)			0.00	N	1,281,559.06
Constitution Capital Partnership II	27,739.73	28,047.95	28,356.16	28,356.17	112,500.01	N	8,937,933.19
Constitution Capital Co-Investment III	36,986.25	37,397.27	37,808.19	37,808.29	150,000.00	N	20,372,252.20
Constitution Capital Partnership III					0.00	N	5,512,654.01
8. Industry Capital	6,463.00	6,004.00	6,057.00	5,249.00	23,773.00	N	1,445,128.00
9. Intercontinental Real Estate	92.00				92.00	C	-
10. Invesco Bal. Risk Commodities Trust	8,750.96	3,011.72			11,762.68	N	-
11. Invesco Real Estate	15,043.74	8,333.73	8,467.10		31,844.57	N	-
12. Laudus (Blackrock)	29,725.91	33,711.43	44,526.52	47,716.83	155,680.69	N	25,686,225.59
13. Lazard Emerging Markets	14,878.50	15,199.37	19,094.25	19,956.89	69,129.01	N	-
14. LMCG			2,728.00	3,894.00	6,622.00	N	2,139,837.40
15. Long Wharf/FREG III	1,407.33	1,308.54			2,715.87	N	-
Long Wharf IV	22,713.20	23,910.32	22,898.19	22,606.79	92,128.50	N	5,835,917.72
Long Wharf V	25,890.41	26,178.09	26,465.76	26,465.76	105,000.02	N	3,471,359.58
16. Mesrow Private Equity	11,250.00	10,125.00	10,125.00	10,125.00	41,625.00	N	4,087,873.00
17. Oberwies	7,644.81	8,493.15	9,111.68	11,285.24	36,534.88	N	4,178,713.93
18. OFI Emerging Markets	9,894.00	15,135.00			25,029.00	N	-
19. Putnam Core Fixed	11,462.73	9,447.15	11,625.77	12,899.26	45,434.91	C	20,703,136.00
20. Putnam High Yield	3,483.68	3,612.96	3,682.58	3,755.22	14,534.44	C	3,391,094.00
21. Pyramis Small Cap	23,715.21	25,427.65	25,956.66	26,863.42	101,962.94	C	14,262,106.30
22. RBC/Polaris International	42,761.35	46,137.31	49,286.28	52,310.84	190,495.78	C	28,844,119.33
23. Seizert Capital Partners	18,203.82	18,564.26	19,306.65	20,469.48	76,544.21	N	12,596,603.00
24. SSgA - Russell 1000	2,065.03	2,625.94	2,518.16	2,205.31	9,414.44	C	11,931,528.00
25. SSgA - Russell 2000	1,720.79	2,361.32	2,400.33	518.40	7,000.84	C	13,311,090.00
26. SSgA - Mid Cap	581.06	889.50	904.21	2,485.59	4,860.36	C	2,810,328.00
27. SSgA - Emerging Markets	2,734.22	2,924.26	5,393.12	3,702.72	14,754.32	C	13,619,684.00
28. SSgA - EAFE International	3,117.13	3,321.00	3,574.01	2,394.65	12,406.79	C	10,396,930.00
29. SSgA - TIPS	1,040.33	1,044.58	1,048.42	1,051.50	4,184.83	C	7,093,189.00
30. TA Associates					0.00	N	-
31. Terra Cap Real Estate II	14,042.89	14,042.89	14,042.89	13,053.56	55,182.23	N	4,777,161.59
Terra Cap Real Estate III	36,044.00	36,044.00	36,044.00	30,088.00	138,220.00	N	10,645,662.00
32. Wasatch Investments	9,013.48	9,804.51	12,553.61	15,138.14	46,509.74	N	3,856,851.74
<b>5304 Management Fees Total</b>	<b>449,544.65</b>	<b>436,784.24</b>	<b>457,899.56</b>	<b>478,220.03</b>	<b>1,822,448.48</b>		<b>285,632,686.40</b>

\*Includes 2015 Quarter 4

5307 Consultant Fees

32. Segal Advisors 5,000.00 5,000.00 5,000.00 5,000.00 5,000.00 20,000.00 C

5307 Investment Consultant Fees Total 35,000.00 5,000.00 5,000.00 5,000.00 5,000.00 50,000.00

\*\* N=Net/C=Check/W=Wire



## APPENDIX PAGE 1

### PLAN DESCRIPTION

The plan is a contributory defined benefit plan covering all Holyoke Retirement System member unit employees deemed eligible by the retirement board, with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Teachers' Retirement Board.

Instituted in 1937, the System is a member of the Massachusetts Contributory Retirement System and is governed by Chapter 32 of the Massachusetts General Laws. Membership in the plan is mandatory immediately upon the commencement of employment for all permanent, full-time employees.

The system provides for retirement allowance benefits up to a maximum of 80% of a member's highest three year average annual rate of regular compensation. Benefit payments are based upon a member's age, length of creditable service, level of compensation, and group classification.

Members become vested after ten years of creditable service. A superannuation retirement allowance may be received upon the completion of twenty years of service or upon reaching the age of 55 with ten years of service. Normal retirement for most employees occurs at age 65 (for certain hazardous duty and public safety positions, normal retirement is at age 55).

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and a portion of the interest they generate constitute the annuity. The differential between the total retirement benefit and the annuity is the pension. The average retirement benefit is approximately 80-85% pension and 15-20% annuity.

Active members contribute either 5, 7, 8, or 9% of their gross regular compensation. Members joining the retirement system after January 1, 1979 must contribute an additional 2% on regular compensation earned at a rate in excess of \$30,000. The percentage rate is keyed to the date upon which an employee's membership commences. These deductions are deposited in the Annuity Savings Fund and earn interest at a rate determined by the Executive Director of PERAC according to statute. When a member's retirement becomes effective, his/her deductions and related interest are transferred to the Annuity Reserve Fund. Cost-of-living adjustments and any other increase in benefits imposed by state law granted between 1981 and 1996 are borne by the state.

The pension portion of any retirement benefit is paid from the Pension Fund of the System. The governmental unit employing the member must annually appropriate and contribute the amount of current year pension payments as determined by PERAC's Actuary. Until recently, retirement systems were paying only the actual retirement benefits that were due each year. Systems had no statutory authorization to put aside any money for the future benefits of employees who are now working. Large unfunded liabilities resulted from operating upon this pay-as-you-go basis. In 1977, legislation authorized local governments to appropriate funds to meet future pension obligations.

In 1983, additional legislation was passed requiring the transfer of investment earnings (in excess of the amount credited to member accounts) into the Pension Reserve Fund. These initiatives have significantly reduced the rate of growth of the retirement systems' unfunded liabilities, and in some systems have actually reduced such liability.

Administrative expenses are funded through excess investment income.

Members who become permanently and totally disabled for further duty may be eligible to receive a disability retirement allowance. The amount of benefits to be received in such cases is dependent upon several factors including: whether or not the disability is work related, the member's age, years of creditable service, level of compensation, veteran's status, and group classification.

Employees who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 are entitled to request a refund of their accumulated total deductions. In addition, depending upon the number of years of creditable service, such employees are entitled to receive either zero (0%) percent, fifty (50%) percent, or one hundred (100%) percent of the regular interest which has accrued upon those deductions. Survivor benefits are extended to eligible beneficiaries of members whose death occurs prior to or following retirement.

## APPENDIX PAGE 2

### SIGNIFICANT ACCOUNTING POLICIES

The accounting records of the System are maintained on a calendar year basis in accordance with the standards and procedures established by the Executive Director of Public Employee Retirement Administration Commission. All investments are stated at market value at the end of the year with the exception of fixed income securities which are at an amortized cost basis.

The *Annuity Savings Fund* is the fund in which members' contributions are deposited. Active members contribute either 5, 7, 8, or 9% of their gross regular compensation. Voluntary contributions, redeposits, and transfers to and from other systems, are also accounted for in this fund. Members' contributions to the fund earn interest at a rate determined by PERAC. Interest for some members who withdraw with less than ten years of service is transferred to the Pension Reserve Fund. Upon retirement, a members' contributions and interest are transferred to the Annuity Reserve Fund. Dormant account balances must be transferred to the Pension Reserve Fund after a period of ten years of inactivity.

The *Annuity Reserve Fund* is the fund to which a member's account is transferred upon retirement from the Annuity Savings Fund and Special Military Service Credit Fund. The annuity portion of the retirement allowance is paid from this fund. Interest is credited monthly to the fund at the rate of 3% annually on the previous month's balance.

The *Special Military Service Credit Fund* contains contributions and interest for members while on a military leave for service in the Armed Forces who will receive creditable service for the period of that leave.

The *Expense Fund* contains amounts appropriated by the governmental units for the purposes of administering the retirement system.

The *Pension Fund* contains the amounts appropriated by the governmental units as established by PERAC to pay the pension portion of each retirement allowance. Any profit or loss realized on the sale or maturity of any investment or on the unrealized gain of a market valued investment as of the valuation date is credited to the Pension Fund.

The *Pension Reserve Fund* contains amounts appropriated by the governmental units for the purposes of funding future retirement benefits. Additionally, any investment income in excess of the amount required to credit interest to the Annuity Savings Fund, Annuity Reserve Fund, and Special Military Service Credit Fund is credited to this Reserve account.

The *Investment Income Account* is credited all income derived from interest and dividends of invested funds. At the end of the year the interest credited to the Annuity Savings Fund, Annuity Reserve Fund, and Special Military Service Credit Fund is distributed from this account and the remaining balance is transferred to the Pension Reserve Fund.

**APPENDIX PAGE 3**

**ACTUARIAL VALUATION AND ASSUMPTIONS**

The most recent actuarial valuation of the System was prepared by Segal, Inc. as of January 1, 2016

The normal cost for employees on that date was	\$5,339,351	9.51% of payroll
The normal cost for the employer was	\$3,420,332	5.99% of payroll
The actuarial liability for active members was	\$162,124,328**	
The actuarial liability for retired members was	\$229,495,808	
Total actuarial accrued liability	\$395,317,945	
System assets as of that date	\$247,218,760	
Unfunded actuarial accrued liability	\$148,099,185	
The ratio of system's assets to total actuarial liability was	62.54%	

\*\*Includes Inactive members.

The principal actuarial assumptions used in the valuation are as follows:

<b>Investment Return:</b>	7.625 % per annum
<b>Rate of Salary Increase:</b>	3% per annum for next 4 years
	4% per annum for each of the following 4 years
	4.25% per annum thereafter for General Employees
	4.75% per annum thereafter for Police & Fire Employees

**SCHEDULE OF FUNDING PROGRESS**

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL)* (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of covered Payroll ((b-a)/c)
1/1/16	\$247,218,760	\$395,317,945	\$148,099,185	62.5%	\$56,166,061	2.64%
1/1/14	\$212,536,626	\$365,625,786	\$153,089,160	58.1%	\$57,502,791	2.66%
1/1/12	\$171,322,821	\$336,471,320	\$165,148,499	50.9%	\$56,134,716	2.94%
1/1/10	\$175,462,452	\$305,560,578	\$130,098,126	57.4%	\$54,171,671	2.40%
1/1/07	\$175,326,173	\$265,688,005	\$90,361,832	66.0%	\$49,762,976	1.82%
1/1/05	\$154,649,632	\$248,324,816	\$93,675,184	62.3%	\$47,514,976	1.97%
1/1/03	\$147,834,259	\$218,195,543	\$70,361,284	67.8%	\$45,373,511	1.55%
1/1/01	\$140,947,847	\$188,431,479	\$47,483,632	74.8%	\$41,123,979	1.15%
1/1/99	\$124,672,189	\$180,215,921	\$55,543,732	69.2%	\$41,606,346	1.33%
1/1/98	\$103,682,801	\$161,786,384	\$58,103,583	64.1%	\$40,572,345	1.43%
1/1/96	\$77,942,408	\$125,981,224	\$48,038,816	61.9%	\$33,425,533	1.44%
1/1/93	\$56,070,637	\$120,256,243	\$64,185,666	46.6%	\$31,545,779	2.03%
1/1/92	\$51,663,549	\$113,248,628	\$61,585,079	45.6%	\$33,061,832	1.86%

**CURRENT 22D AMORTIZATION SCHEDULE**

See attached schedule.

SECTION 2: Valuation Results for the City of Holyoke Retirement System

CHART 16

Funding Schedule – Fully Funded by June 30, 2032, Fiscal 2018 and Fiscal 2019 Appropriations Equal to Fiscal 2017 Appropriation

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of 2002 ERI Liability	(4) Amortization of 2003 ERI Liability	(5) Amortization of 2010 ERI Liability	(6) Amortization of FY06-07 Section 90 ACD Liability	(7) Amortization of FY08-09 Section 90 ACD Liability	(8) Amortization of Section 10 Liability	(9) Amortization of Remaining Unfunded Liability	(10) Total Plan Cost: (2) + (3) (4) + (5) + (6) + (7) + (8) + (9)	(11) Total UAL at Beginning of Fiscal Year	(12) Increase Over Prior Appropriation
2017	\$3,420,332	\$32,878	\$307,095	\$153,509	\$104,650	\$38,690	\$28,032	\$13,202,926	\$17,288,112	\$153,641,752	--
2018	3,553,227	33,782	315,540	153,509	107,527	39,754	28,803	13,055,970	17,288,112	150,703,420	0.00%
2019	3,691,255	34,712	324,217	153,509	110,484	40,847	29,595	12,903,493	17,288,112	147,681,464	0.00%
2020	3,834,614	35,666	333,133	153,509	113,523	41,970	30,409	13,379,762	17,922,586	144,574,932	3.67%
2021	3,983,509	36,647	342,294	153,509	116,645	43,124	31,245	13,873,372	18,580,345	140,712,587	3.67%
2022	4,138,151	37,655	351,707	153,509	119,852	44,310	32,105	14,384,955	19,262,244	136,018,042	3.67%
2023	4,298,762	38,690	361,379	--	123,148	45,529	32,987	15,068,673	19,969,168	130,408,407	3.67%
2024	4,465,572	39,754	371,317	--	126,535	46,781	33,895	15,618,183	20,702,037	123,793,771	3.67%
2025	4,638,817	40,847	381,528	--	130,015	48,067	34,827	16,187,700	21,461,801	116,076,638	3.67%
2026	4,818,745	41,971	392,020	--	133,590	49,389	35,784	16,777,950	22,249,449	107,151,323	3.67%
2027	5,005,613	43,125	402,801	--	137,264	50,748	36,768	17,389,685	23,066,004	96,903,299	3.67%
2028	5,199,688	44,311	413,878	--	141,039	52,143	37,780	18,023,688	23,912,527	85,208,501	3.67%
2029	5,401,244	45,529	425,260	--	144,917	53,577	38,819	18,680,770	24,790,116	71,932,561	3.67%
2030	5,610,571	46,781	436,954	--	148,902	55,050	39,886	19,361,770	25,699,914	56,929,992	3.67%
2031	5,827,965	48,068	448,971	--	152,997	56,564	40,983	20,067,552	26,643,100	40,043,316	3.67%
2032	6,053,737	49,390	461,317	--	157,205	58,120	42,111	20,725,219	27,547,099	21,102,117	3.39%
2033	6,288,207	--	--	--	--	--	--	--	6,288,207	--	-77.17%

Notes: Recommended contributions are assumed to be paid on July 1 and December 31.

Item (2) reflects 3.5% growth in payroll as well as 0.15% adjustment to normal cost to reflect the effects of mortality improvement due to generational mortality assumption.

Projected normal cost does not reflect the future impact of pension reform for future hires.

Assumes contribution of budgeted amount for fiscal year 2017.

Amortization payments calculated to increase at 2.75% per year for items (3), (4), (6), (7) and (8).