

	CONSULTANTS							
RETIREMENT SYSTEM	MARKET VALUE (12/31/18)	5-Year RETURN	10-Year RETURN	34-Year RETURN	INVESTMENT RELATED FEES	2015 EXPENSE RATIO (%)	2018 EXPENSE RATIO (%)	
DAHAB ASSOCIATES								
ANDOVER	\$137,529,805	6.13%	9.01%	8.18%	\$561,970	.50%	.41%	
ATTLEBORO	\$139,055,309	4.99%	9.44%	8.64%	\$815,012	.60%	.59%	
DUKES COUNTY	\$154,715,561	7.52%	9.85%	7.79%	\$792,825	.51%	.51%	
FRANKLIN REGIONAL	\$138,792,634	5.99%	9.60%	8.21%	\$798,433	.58%	.58%	
NORTH ATTLEBORO	\$111,419,296	5.90%	9.57%	8.41%	\$628,584	.67%	.57%	
SHREWSBURY	\$121,891,006	6.59%	9.81%	8.93%	\$525,894	.35%	.43%	
SWAMPSCOTT	\$56,395,263	6.22%	8.42%	8.83%	\$314,850	.68%	.56%	
TAUNTON	\$295,983,293	5.47%	9.27%	9.28%	\$1,644,382	.72%	.56%	
	FIDUCIAR	Y INVES	TMENT	ADVISO	RS			
ADAMS	\$32,396,766	2.60%	6.56%	7.47%	\$114,707	.44%	.35%	
CONCORD	\$159,259,926	5.93%	8.92%	8.38%	\$849,902	.49%	.53%	
PLYMOUTH	\$169,361,243	5.99%	9.71%	8.61%	\$1,265,338	.83%	.75%	
WATERTOWN	\$182,595,353	5.47%	8.53%	8.06%	\$1,285,171	.76%	.70%	
WEYMOUTH	\$185,769,505	5.12%	9.13%	9.49%	\$1,371,109	.74%	.74%	

# Investment Expense Analysis (Continued) –

Consultants, Fund of Funds, Independent & PRIT

	CONS	ULTANT	<b>S</b> (Conti	inued)			
RETIREMENT SYSTEM	MARKET VALUE (12/31/18)	5-Year RETURN	10-Year RETURN	34-Year RETURN	INVESTMENT RELATED FEES	2015 EXPENSE RATIO (%)	2018 EXPENSE RATIO (%)
		GREY:	STONE				
DANVERS	\$107,737,942	4.01%	8.54%	7.76%	\$779,474	.65%	.72%
	MEKET	A INVES	TMENT	GROUP			
HINGHAM	\$115,083,148	6.10%	8.63%	8.92%	\$651,377	.44%	.57%
LEXINGTON	\$157,854,265	5.77%	8.86%	8.55%	\$1,345,774	.82%	.85%
MARLBOROUGH	\$162,112,826	4.42%	7.78%	8.06%	\$630,160	.41%	.38%
MA HOUSING FINANCE (MHFA)	\$146,209,683	4.58%	7.86%	7.26%	\$807,454	.82%	.55%
NORWOOD	\$154,175,077	5.90%	9.10%	8.88%	\$1,101,762	.69%	.71%
PLYMOUTH COUNTY	\$939,559,694	4.49%	8.70%	8.75%	\$7,937,967	.73%	.90%
QUINCY	\$319,007,835	4.99%	8.06%	7.98%	\$1,571,236	.62%	.67%
WORCESTER	\$904,473,448	5.03%	8.44%	8.56%	\$5,059,765	.64%	.56%
		NE	PC				
BELMONT	\$101,258,859	5.57%	9.83%	9.11%	\$712,422	.71%	.75%
BOSTON (CITY)	\$4,786,346,484	4.57%	8.36%	8.61%	\$31,183,604	.59%	.69%
HAMPSHIRE COUNTY	\$308,607,330	5.53%	8.71%	8.11%	\$1,939,320	.81%	.63%
MWRA*	\$508,781,941	4.91%	9.07%	7.95%	\$3,523,118	.78%	.69%
MEDFORD	\$183,852,733	4.40%	8.04%	8.47%	\$1,311,276	.58%	.71%
Based on a 33-year return							

	CONS	ULTANT	<b>S</b> (Cont	inued)			
RETIREMENT SYSTEM	MARKET VALUE (12/31/18)	5-Year RETURN	10-Year RETURN	34-Year RETURN	INVESTMENT RELATED FEES	2015 EXPENSE RATIO (%)	2018 EXPENSE RATIO (%)
	SEG!	AL MARG	O ADVI	SORS			
BRISTOL COUNTY	\$647,605,663	5.16%	9.24%	8.64%	\$6,586,851	.85%	.99%
CAMBRIDGE	\$1,270,275,254	5.67%	9.65%	9.06%	\$9,199,355	.61%	.72%
NEW BEDFORD	\$311,010,370	5.78%	9.03%	7.91%	\$2,412,160	.73%	.78%
	TRUS	ST ADVI	SORY G	ROUP			
CLINTON	\$49,065,214	6.56%	9.12%	7.63%	\$306,536	.57%	.62%
	WAINWRIG	HT INV	STMEN	T COUN	SEL		
FALMOUTH	\$133,843,149	5.17%	8.70%	8.69%	\$1,026,260	.77%	.77%
HAVERHILL	\$192,531,160	5.91%	9.14%	9.68%	\$1,538,572	.86%	.82%
NORFOLK COUNTY	\$913,802,949	4.83%	8.86%	8.35%	\$7,136,557	.83%	.78%
SAUGUS	\$100,172,688	6.49%	9.20%	9.03%	\$545,440	.52%	.54%
WEBSTER	\$37,459,391	5.08%	9.29%	7.89%	\$304,463	.85%	.81%
WOBURN	\$136,377,105	5.28%	9.41%	9.06%	\$1,106,109	.76%	.81%
	WIL	SHIRE F	SSOCIA	TES			
MASSPORT	\$606,474,045	5.22%	8.95%	8.72%	\$2,303,867	.39%	.38%

## Investment Expense Analysis (Continued) –

Consultants, Fund of Funds, Independent & PRIT

FUND OF FUNDS								
RETIREMENT SYSTEM	MARKET VALUE (12/31/18)	5-Year RETURN	10-Year RETURN	34-Year RETURN	INVESTMENT RELATED FEES	2015 EXPENSE RATIO (%)	2018 EXPENSE RATIO (%)	
	RUSSELL INVESTMENT GROUP							
BROOKLINE	\$299,550,719	5.85%	8.67%	8.45%	\$2,613,251	.69%	.87%	
SEI								
BRAINTREE	\$192,658,719	4.89%	8.23%	8.38%	\$1,339,538	.60%	.70%	
CHICOPEE	\$311,532,614	5.95%	10.73%	8.47%	\$2,219,378	.80%	.71%	
BROCKTON	\$385,276,393	4.59%	8.29%	8.39%	\$2,855,321	.64%	.74%	
NATICK	\$137,778,939	5.96%	9.47%	7.94%	\$966,572	.67%	.70%	
STONEHAM	\$88,103,358	6.09%	8.99%	8.59%	\$562,257	.54%	.64%	
WALTHAM	\$233,516,181	5.83%	8.22%	8.41%	\$923,694	.57%	.54%	

NOTES:			

INDEPENDENT							
RETIREMENT SYSTEM	MARKET VALUE (12/31/18)	5-Year RETURN	10-Year RETURN	34-Year RETURN	INVESTMENT RELATED FEES	2015 EXPENSE RATIO (%)	2018 EXPENSE RATIO (%)
DeBURLO							
MALDEN	\$258,265,604	6.84%	9.41%	9.53%	\$742,247	.30%	.29%
NORTH ADAMS	\$65,938,384	7.18%	10.01%	9.50%	\$275,215	.47%	.42%
NORTHAMPTON	\$128,491,089	7.35%	9.82%	9.32%	\$421,839	.39%	.33%
WEST SPRINGFIELD	\$121,713,785	6.81%	9.31%	8.15%	\$394,932	.37%	.32%
	INT	ERNALL'	Y MANA	GED			
MAYNARD	\$42,110,930	5.51%	8.74%	7.67%	\$258,680	.56%	.61%
GREATER LAWRENCE	\$17,916,950	6.20%	9.81%	7.54%	\$75,868	.36%	.42%
HOLYOKE	\$270,857,947	6.24%	10.93%	9.14%	\$1,938,509	.80%	.72%
LEOMINSTER	\$196,813,645	5.99%	9.59%	8.41%	\$1,217,491	.62%	.62%
SOMERVILLE	\$262,832,608	5.22%	9.89%	8.70%	\$1,288,578	.51%	.49%
WESTFIELD	\$220,391,024	6.40%	9.96%	8.59%	\$1,561,346	.68%	.71%

## Investment Expense Analysis (Continued) –

Consultants, Fund of Funds, Independent & PRIT

	PRIT							
RETIREMENT SYSTEM	MARKET VALUE (12/31/18)	5-Year RETURN	10-Year RETURN	34-Year RETURN	INVESTMENT RELATED FEES	2015 EXPENSE RATIO (%)	2018 EXPENSE RATIO (%)	
AMESBURY	\$55,070,036	6.45%	9.12%	7.90%	\$292,948	.51%	.53%	
ARLINGTON	\$152,460,412	6.22%	8.70%	8.22%	\$827,158	.54%	.54%	
BARNSTABLE COUNTY	\$1,072,642,281	6.50%	9.11%	7.42%	\$5,834,971	54%	52%	
BERKSHIRE COUNTY	\$236,096,140	6.47%	9.12%	8.84%	\$1,265,892	.51%	.54%	
BEVERLY	\$121,535,060	6.48%	9.26%	8.44%	\$662,608	.52%	.55%	
BLUE HILLS REGIONAL	\$10,941,232	6.41%	9.11%	8.52%	\$59,458	.52%	.54%	
BOSTON TEACHERS	\$1,638,029,039	6.47%			\$8,521,859	.50%	.52%	
CHELSEA	\$165,334,302	6.51%	9.17%	7.86%	\$888,542	.51%	.54%	
DEDHAM	\$138,483,536	6.54%	9.26%	9.33%	\$752,112	.52%	.54%	
EASTHAMPTON	\$52,245,369	6.47%	9.15%	8.15%	\$282,554	.52%	.54%	
ESSEX COUNTY	\$451,471,396	6.69%	9.82%	8.59%	\$2,497,005	.57%	.55%	
EVERETT	\$154,265,907	6.55%	9.33%	8.33%	\$820,883	.51%	.53%	
FAIRHAVEN	\$61,480,030	6.44%	9.15%	9.12%	\$333,922	.51%	.54%	

	PRIT (Continued)							
RETIREMENT SYSTEM	MARKET VALUE (12/31/18)	5-Year RETURN	10-Year RETURN	34-Year RETURN	INVESTMENT RELATED FEES	2015 EXPENSE RATIO (%)	2018 EXPENSE RATIO (%)	
FALL RIVER	\$257,334,290	6.33%	8.97%	8.23%	\$1,402,666	.51%	.55%	
FITCHBURG	\$115,991,586	6.34%	8.57%	7.54%	\$628,231	.52%	.52%	
FRAMINGHAM	\$308,055,151	6.48%	9.16%	9.09%	\$1,656,376	.51%	.54%	
GARDNER	\$53,336,846	6.47%	9.16%	9.21%	\$290,752	.52%	.55%	
GLOUCESTER	\$103,831,591	6.53%	9.17%	8.71%	\$559,922	.52%	.54%	
GREENFIELD	\$67,505,517	6.55%	9.35%	8.37%	\$365,998	.52%	.54%	
HAMPDEN COUNTY	\$356,792,414	6.46%	8.80%	8.45%	\$1,926,974	.52%	.54%	
HULL	\$47,463,868	6.53%	9.14%	7.82%	\$254,851	.51%	.54%	
LAWRENCE	\$221,926,167	6.46%	9.15%	7.70%	\$1,198,339	.51%	.54%	
LOWELL	\$367,981,493	6.26%	8.88%	8.90%	\$1,999,732	.52%	.54%	
LYNN	\$349,406,465	6.51%	8.51%	7.90%	\$1,879,625	.57%	.54%	
MARBLEHEAD	\$95,013,701	6.49%	9.20%	9.04%	\$524,059	.53%	.55%	

## Investment Expense Analysis (Continued) –

Consultants, Fund of Funds, Independent & PRIT

	ı	PRIT (Co	ntinued	)			
RETIREMENT SYSTEM	MARKET VALUE (12/31/18)	5-Year RETURN	10-Year RETURN	34-Year RETURN	INVESTMENT RELATED FEES	2015 EXPENSE RATIO (5)	2018 EXPENSE RATIO (%)
MASS. TEACHERS' (MTRS)	\$27,090,334,578	6.51%	9.25%	9.27%	\$150,343,868	.55%	55%
MELROSE	\$83,952,105	6.12%	8.50%	8.23%	\$432,270	.53%	.51%
METHUEN	\$149,831,557	6.90%	9.10%	7.91%	\$824,824	.51%	.55%
MIDDLESEX COUNTY	\$1,344,181,892	6.14%	8.45%	8.24%	\$7,059,397	.50%	.53%
MILFORD	\$92,815,489	6.47%	8.99%	8.09%	\$488,260	.52%	.53%
MILTON	\$131,827,703	6.45%	9.19%	9.18%	\$705,620	.51%	.54%
MINUTEMAN REGIONAL	\$13,358,282	6.27%	9.00%	9.24%	\$72,155	.51%	.54%
MONTAGUE	\$41,320,127	6.41%	9.12%	8.94%	\$224,321	.52%	.54%
NEEDHAM	\$158,656,981	6.44%	9.02%	9.43%	\$846,786	.52%	.53%
NEWBURYPORT	\$80,576,898	6.27%	9.01%	8.08%	\$432,945	.50%	.54%
NEWTON	\$341,722,946	6.48%	8.94%	8.47%	\$1,791,604	.51%	.52%
NORTHBRIDGE	\$34,785,612	6.52%	9.24%	9.16%	\$190,081	.52%	.55%
PEABODY	\$144,830,313	6.47%	9.20%	8.48%	\$795,004	.52%	.55%

	PRIT (Continued)							
RETIREMENT SYSTEM	MARKET VALUE (12/31/18)	5-Year RETURN	10-Year RETURN	34-Year RETURN	INVESTMENT RELATED FEES	2015 EXPENSE RATIO (5)	2018 EXPENSE RATIO (%)	
PITTSFIELD	\$136,284,718	6.41%	8.86%	8.07%	\$713,336	.51%	.52%	
READING	\$136,202,939	6.57%	9.26%	9.10%	\$694,633	.52%	.51%	
REVERE	\$157,674,641	6.39%	8.92%	8.24%	\$844,907	.51%	.54%	
SALEM	\$174,705,542	6.28%	8.63%	7.99%	\$933,414	.51%	.53%	
SOUTHBRIDGE	\$52,713,414	6.51%	8.47%	7.93%	\$284,315	.51%	.54%	
SPRINGFIELD	\$337,595,289	6.70%	8.97%	8.27%	\$1,796,079	.52%	.53%	
STATE	\$26,223,284,352	6.52%	9.25%	9.26%	\$145,125,562	.54%	.55%	
WAKEFIELD	\$118,321,185	6.50%	9.24%	9.45%	\$645,115	.53%	.55%	
WELLESLEY	\$187,848,687	6.49%	9.22%	9.72%	\$1,012,271	.51%	.54%	
WINCHESTER	\$118,250,062	5.48%	7.75%	8.74%	\$583,547	.25%	.49%	
WINTHROP	\$69,002,722	6.49%	8.87%	8.50%	\$369,252	.50%	.54%	
WORCESTER REGIONAL	\$693,203,279	6.39%	8.46%	8.04%	\$3,743,928	.56%	.54%	

## 2018 Returns and Annualized Returns: **Funded Ratios**

	Return (2018)	5-Year Return	10-Year Return	34-Year Return
ADAMS	-5.10%	2.60%	6.56%	7.47%
AMESBURY	-1.70%	6.45%	9.12%	7.90%
ANDOVER	-3.49%	6.13%	9.01%	8.18%
ARLINGTON	-1.53%	6.22%	8.70%	8.22%
ATTLEBORO	-3.93%	4.97%	9.43%	8.64%
BARNSTABLE COUNTY	-1.81%	6.50%	9.11%	7.42%
BELMONT	-2.69%	5.57%	9.83%	9.11%
BERKSHIRE COUNTY	-1.75%	6.47%	9.12%	8.84%
BEVERLY	-1.79%	6.48%	9.26%	8.44%
BLUE HILLS REGIONAL	-1.84%	6.41%	9.11%	8.52%
BOSTON (CITY)	-5.20%	4.57%	8.36%	8.61%
BOSTON (TEACHERS)	-1.66%	6.47%	N/A	N/A
BRAINTREE	-4.21%	4.89%	8.23%	8.38%
BRISTOL COUNTY	-2.88%	5.16%	9.24%	8.64%
BROCKTON	-5.20%	4.59%	8.29%	8.39%
BROOKLINE	-1.75%	5.85%	8.67%	8.45%
CAMBRIDGE	-3.10%	5.67%	9.65%	9.06%
CHELSEA	-1.80%	6.51%	9.17%	7.86%

Funded Ratio	Date of Most Recent Valuation
72.1%	1/1/18
58.7%	1/1/18
48.6%	1/1/18
51.5%	1/1/18
62.6%	1/1/18
59.5%	1/1/18
58.2%	1/1/18
82.8%	1/1/17
57.3%	1/1/18
73.7%	1/1/18
76.9%	1/1/18
39.6%	1/1/18
65.1%	1/1/18
67.7%	1/1/18
62.4%	1/1/18
57.1%	1/1/18
87.7%	1/1/18
64.3%	1/1/17

## 2018 Returns and Annualized Returns: Funded Ratios (Continued)

	Return	5-Year	10-Year	34-Year
	(2018)	Return	Return	Return
CHICOPEE	-3.43%	5.95%	10.73%	8.47%
CLINTON	-1.75%	6.56%	9.12%	7.63%
CONCORD	-3.49%	5.93%	8.92%	8.38%
DANVERS	-6.30%	4.01%	8.54%	7.76%
DEDHAM	-1.81%	6.54%	9.26%	9.33%
DUKES COUNTY	-0.45%	7.52%	9.85%	7.79%
EASTHAMPTON	-1.78%	6.47%	9.15%	8.15%
ESSEX REGIONAL	-1.79%	6.69%	9.82%	8.59%
EVERETT	-1.74%	6.55%	9.33%	8.33%
FAIRHAVEN	-1.78%	6.44%	9.15%	9.12%
FALL RIVER	-1.76%	6.33%	8.97%	8.23%
FALMOUTH	-5.82%	5.17%	8.70%	8.69%
FITCHBURG	-1.85%	6.34%	8.57%	7.54%
FRAMINGHAM	-1.71%	6.48%	9.16%	9.09%
FRANKLIN REGIONAL	-3.13%	5.99%	9.60%	8.21%
GARDNER	-1.79%	6.47%	9.16%	9.21%
GLOUCESTER	-1.71%	6.53%	9.17%	8.71%
GREATER LAWRENCE	-1.75%	6.20%	9.81%	7.54%

Funded Ratio	Date of Most Recent Valuation
75.9%	1/1/17
64.0%	1/1/17
86.5%	1/1/18
58.6%	1/1/18
94.7%	1/1/18
76.4%	1/1/18
73.3%	1/1/18
53.4%	1/1/18
57.3%	1/1/18
72.9%	1/1/18
42.0%	1/1/17
64.8%	1/1/18
43.8%	1/1/18
71.4%	1/1/18
73.2%	1/1/18
54.6%	1/1/17
46.8%	1/1/18
88.6%	1/1/17

## 2018 Returns and Annualized Returns: Funded Ratios (Continued)

	Return (2018)	5-Year Return	10-Year Return	34-Year Return
GREENFIELD	-1.70%	6.55%	9.35%	8.37%
HAMPDEN COUNTY REGIONAL	-1.77%	6.46%	8.80%	8.45%
HAMPSHIRE COUNTY	-2.27%	5.53%	8.71%	8.11%
HAVERHILL	-1.77%	5.91%	9.14%	9.68%
HINGHAM	-1.79%	6.10%	8.63%	8.92%
HOLYOKE	-4.51%	6.24%	10.93%	9.14%
HULL	-1.78%	6.53%	9.14%	7.82%
LAWRENCE	-1.73%	6.46%	9.15%	7.70%
LEOMINSTER	-4.68%	5.99%	9.59%	8.41%
LEXINGTON	-3.93%	5.77%	8.86%	8.55%
LOWELL	-1.74%	6.26%	8.88%	8.90%
LYNN	-1.94%	6.51%	8.51%	7.90%
MALDEN	4.73%	6.84%	9.41%	9.53%
MARBLEHEAD	-1.81%	6.49%	9.20%	9.04%
MARLBOROUGH	-4.43%	4.42%	7.78%	8.06%
MA HOUSING FINANCE (MHFA)	-3.14%	4.58%	7.86%	7.26%
MASSPORT	-4.53%	5.22%	8.95%	8.72%
MA TEACHERS RETIREMENT SYSTEM (MTRS)	-1.81%	6.51%	9.25%	9.27%

Funded Ratio	Date of Most Recent Valuation
56.0%	1/1/17
49.1%	1/1/18
61.5%	1/1/18
51.9%	1/1/18
70.9%	1/1/18
67.7%	1/1/18
63.9%	1/1/18
52.7%	1/1/18
99.7%	1/1/18
87.2%	1/1/18
56.0%	1/1/17
49.2%	1/1/17
72.0%	1/1/18
64.8%	1/1/18
76.4%	1/1/17
76.8%	1/1/17
90.9%	1/1/18
52.4%	1/1/18

### 2018 Returns and Annualized Returns: Funded Ratios (Continued)

	Return (2018)	5-Year Return	10-Year Return	34-Year Return
MA WATER RESOURCES AUTHORITY (MWRA)	-1.73%	4.91%	9.07%	7.95%*
MAYNARD	-6.90%	5.51%	8.74%	7.67%
MEDFORD	-3.07%	4.40%	8.04%	8.47%
MELROSE	-1.72%	6.12%	8.50%	8.23%
METHUEN	-1.77%	6.90%	9.10%	7.91%
MIDDLESEX COUNTY	-1.51%	6.14%	8.45%	8.24%
MILFORD	-1.82%	6.47%	8.99%	8.09%
MILTON	-1.80%	6.46%	9.19%	9.18%
MINUTEMAN REGIONAL	-1.76%	6.27%	9.00%	9.24%
MONTAGUE	-1.84%	6.41%	9.12%	8.94%
NATICK	-3.44%	5.96%	9.47%	7.94%
NEEDHAM	-1.72%	6.44%	9.02%	9.43%
NEW BEDFORD	-4.22%	5.78%	9.03%	7.91%
NEWBURYPORT	-1.82%	6.27%	9.01%	8.08%
NEWTON	-1.45%	6.48%	8.94%	8.47%
NORFOLK COUNTY	-4.58%	4.83%	8.86%	8.35%
NORTH ADAMS	4.95%	7.18%	10.01%	9.50%
NORTH ATTLEBORO	-3.50%	5.90%	9.57%	8.41%

Funded Ratio	Date of Most Recent Valuation
95.0%	1/1/18
70.5%	1/1/17
68.1%	1/1/18
57.5%	1/1/17
53.4%	1/1/18
47.9%	1/1/18
60.9%	1/1/17
81.5%	1/1/17
88.3%	1/1/17
77.7%	1/1/18
62.2%	1/1/17
68.2%	1/1/18
45.2%	1/1/18
65.3%	1/1/18
51.7%	1/1/18
62.4%	1/1/18
75.0%	1/1/17
83.4%	1/1/17

## 2018 Returns and Annualized Returns: Funded Ratios (Continued)

	Return (2018)	5-Year Return	10-Year Return	34-Year Return
NORTHAMPTON	4.58%	7.35%	9.82%	9.32%
NORTHBRIDGE	-1.74%	6.52%	9.24%	9.16%
NORWOOD	-3.54%	5.90%	9.10%	8.88%
PEABODY	-1.81%	6.47%	9.20%	8.48%
PITTSFIELD	-1.55%	6.41%	8.86%	8.07%
PLYMOUTH	-3.13%	5.99%	9.71%	8.61%
PLYMOUTH COUNTY	-6.53%	4.49%	8.70%	8.75%
PRIM BOARD	-1.73%	6.44%	9.14%	9.33%
QUINCY	-2.46%	4.99%	8.06%	7.98%
READING	-1.39%	6.57%	9.26%	9.10%
REVERE	-1.82%	6.39%	8.92%	8.24%
SALEM	-1.78%	6.28%	8.63%	7.99%
SAUGUS	-1.75%	6.49%	9.20%	9.03%
SHREWSBURY	-2.49%	6.59%	9.81%	8.93%
SOMERVILLE	-2.92%	5.22%	9.89%	8.70%
SOUTHBRIDGE	-1.80%	6.51%	8.47%	7.93%
SPRINGFIELD	-1.59%	6.70%	8.97%	8.27%

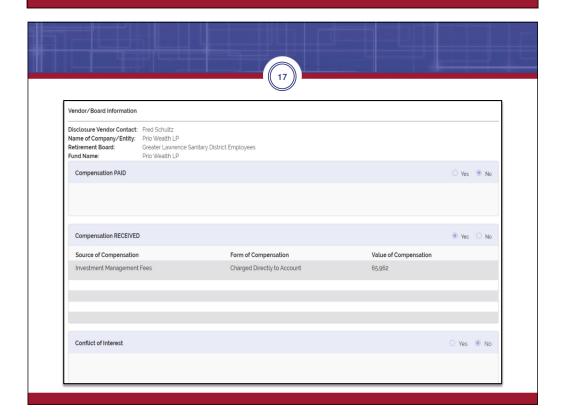
Funded Ratio	Date of Most Recent Valuation
68.7%	1/1/18
69.1%	1/1/18
80.6%	1/1/18
52.3%	1/1/18
48.3%	1/1/17
50.1%	1/1/17
61.7%	1/1/17
NOT APP	PLICABLE
45.0%	1/1/18
73.8%	1/1/17
56.1%	1/1/17
57.4%	1/1/18
73.9%	1/1/17
92.4%	1/1/18
66.4%	1/1/17
60.3%	1/1/18
27.0%	1/1/18

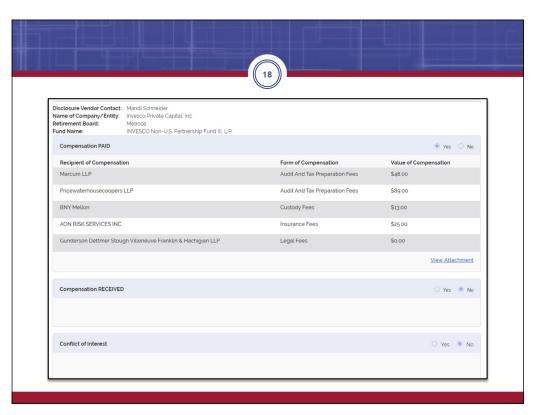
<sup>\*</sup> Based on 33-year return

# 2018 Returns and Annualized Returns: Funded Ratios (Continued)

	Return (2018)	5-Year Return	10-Year Return	34-Year Return
STATE	-1.80%	6.52%	9.25%	9.26%
STONEHAM	-4.35%	6.09%	8.99%	8.59%
SWAMPSCOTT	-3.41%	6.22%	8.42%	8.83%
TAUNTON	-4.01%	5.47%	9.27%	9.28%
WAKEFIELD	-1.80%	6.50%	9.24%	9.45%
WALTHAM	-4.61%	5.83%	8.22%	8.41%
WATERTOWN	-4.58%	5.47%	8.53%	8.06%
WEBSTER	-5.27%	5.08%	9.29%	7.89%
WELLESLEY	-1.82%	6.49%	9.22%	9.72%
WEST SPRINGFIELD	4.75%	6.81%	9.31%	8.15%
WESTFIELD	-4.67%	6.40%	9.96%	8.59%
WEYMOUTH	-4.60%	5.12%	9.13%	9.49%
WINCHESTER	-2.58%	5.48%	7.75%	8.74%
WINTHROP	-1.72%	6.49%	8.87%	8.50%
WOBURN	-5.71%	5.28%	9.41%	9.06%
WORCESTER	-3.16%	5.03%	8.44%	8.56%
WORCESTER REGIONAL	-1.91%	6.39%	8.46%	8.04%
COMPOSITE	-2.25%	6.22%	9.13%	9.00%

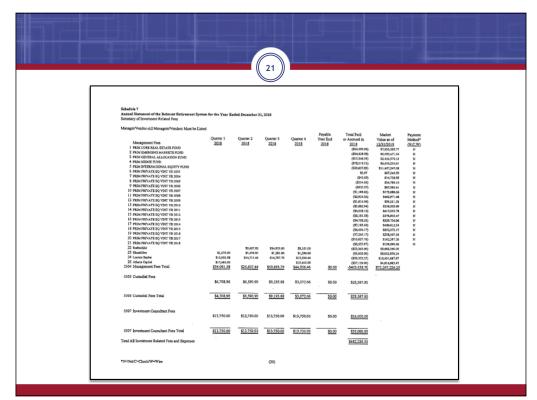
Funded Ratio	Date of Most Recent Valuation
64.9%	1/1/18
74.7%	1/1/18
53.5%	1/1/17
79.6%	1/1/18
65.3%	1/1/18
57.7%	1/1/17
88.2%	1/1/18
57.8%	1/1/18
75.4%	1/1/17
64.4%	1/1/18
69.5%	1/1/17
66.1%	1/1/18
79.0%	1/1/17
80.8%	1/1/17
63.4%	1/1/18
63.5%	1/1/18
45.3%	1/1/18
NOT APP	LICABLE



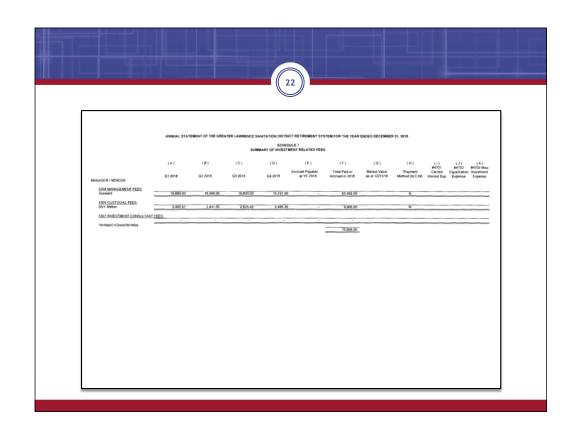




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Ann	ual Statement of the City of Melrose R	etirement Syste	em for the Yea	ar Ended Dece	ember 31, 20	018.	- 97	
	edule 7 nary of Investment Related Fees							
	ger/Vendor							
_	5304 Management Fees;	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Accrued/Payable at Year End 2018	Total Paid or Accrued in 2018	Payment Method (N,C,W)
1 2 3 4	PRIT Fund Ascent Fund IV	38.00 107,078.90 1,401.00	110,377.57 1,315.00	107,228.84 934.00 474.84	106,884.19 (3,462.00)		\$ 38.00 \$ 431,669.50 \$ 188.00 \$ 474.84 \$	
	5304 Management Fees TOTAL	\$ 108,517.90	\$ 111,692.57	\$ 108,637.68	\$ 103,422.19	s .	\$ 432,270.34	
1	5305 Custodial Fees: N/A						\$ .	
	5305 Custodial Fees TOTAL	\$ .	ş .	s -	ş .	s .	\$ .	
1	5306 Management Fees Paid: Segal						s .	с
	5306 Management Fees Paid TOTAL	s .	s .	\$ .	s .	s .	\$ .	
1	5307 Investment Consultant Fees: Segal						s .	с
1	5307 Investment Consultant Fees TOTAL	s .	s .	ş .	s .	\$ .	\$ .	



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#### COMMONWEALTH OF MASSACHUSETTS

**Public Employee Retirement Administration Commission** 

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TTY: 617-591-8917 | Web: www.mass.gov/perac



