

***City of Marysville
General Employees Retirement System***

Actuarial Information for GASB Statements 67/68

June 30, 2019

November 26, 2019

The Board of Trustees
City of Marysville General City Employees Retirement System
Marysville, Michigan

Dear Board Members:

This document contains actuarial information required for Plan reporting purposes pursuant to Governmental Accounting Standards Board Statements No. 67/68 effective for the Fiscal Year ended June 30, 2019.

Respectfully submitted,



Denise M. Jones
Senior Consultant



Sandra W. Rodwan
Member, American Academy of Actuaries

Net Pension Liability

The components of the net pension liability at June 30, 2019 were as follows:

Total pension liability	\$27,098,881
Plan fiduciary net position	16,757,510
City's net pension liability	\$10,341,371
Plan fiduciary net position as a percentage of the total pension liability	61.84%
Covered payroll	\$2,189,939
City's net pension liability as a percentage of covered payroll	472.2%

Actuarial assumptions. The total pension liability was determined based on the annual actuarial valuation as of June 30, 2019. The following actuarial assumptions were applied to compute the total pension liability:

Actuarial cost method	Entry Age
Inflation	2.5%
Salary Increases	4.0% (includes inflation)
Cost of living assumption adjustments	Varies depending on retirement date

Mortality rates were based on the RP 2000 Combined Healthy Annuitant Mortality Table Projected to 2014.

Discount rate. The discount rate used to measure the total pension liability was 7.50%. The projection of cash flows used to determine the discount rate assumed that member contributions will be made at the current contribution rate and that City Contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the 7.50% discount rate is the single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the actuarial present values determined in conformity with GASB 67, paragraph 44.

Sensitivity of discount rate

	1% Decrease 6.50%	GASB 67 Computed Rate 7.50%	1% Increase 8.50%
City's net pension liability	\$13,295,853	\$10,341,871	\$7,834,276

Schedule of Changes in the City's Net Pension Liability and Related Ratios

	Year Ended <u>6/30/2019</u>
Total pension liability	
Service cost	\$324,725
Interest	1,919,988
Changes in benefit terms	-
Differences between expected and actual experience	284,447
Changes in assumptions used for Total Pension Liability (TPL)	
Discount rate assumption	-
Mortality assumption	-
Total due to TPL assumption changes	-
Benefit payments, including refunds of member contributions	(1,735,507)
Net change in total pension liability	\$793,653
Total pension liability-beginning	26,305,228
Total pension liability-ending (a)	\$27,098,881
Plan fiduciary net position	
Contributions-employer	1,017,228
Contributions-member	180,875
Net investment income	954,730
Benefit payments, including refunds of member contributions	(1,735,507)
Administrative Expense	(17,690)
Other	-
Net change in plan fiduciary net position	399,636
Plan fiduciary net position-beginning	16,357,874
Plan fiduciary net position-ending (b)	16,757,510
City's net pension liability-ending (a)-(b)	\$10,341,371
Plan fiduciary net position as a percentage of the total pension liability	61.84%
Covered employee payroll	\$2,189,939
City's net pension liability as a percentage of covered employee payroll	472.2%

Additional Required Disclosures

	<u>6/30/2019</u>
Total expected remaining service lives	
Active Participants	333.1
Inactive Participants	0
(a) Total expected remaining service lives	333.1
Number of Participants	
Active	37
Retired	53
Vested	10
(b) Total	100
(c) Average of expected remaining service lives of all active and inactive participants (a)/(b)	3.3
(d1) Difference between expected and actual demographic experience	284,447
(d2) Portion allocated to expense (d1)/(c)	86,196
(d3) Deferred portion (d1)-(d2)	198,251
(e1) Changes in assumptions	-
(e2) Portion allocated to expense (e1)/(c)	-
(e3) Deferred portion (e1)-(e2)	-
(f1) Difference between expected and actual investment experience	251,295
(f2) Portion allocated to expense (f1)/5	50,259
(f3) Deferred portion (f1)-(f2)	201,036
(g) Total Deferred Portion	399,287

**SCHEDULE OF CITY CONTRIBUTIONS
LAST 10 FISCAL YEARS
Year Ended June 30**

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Actuarially determined contribution	\$615,978	\$614,325	\$480,103	\$436,383	\$460,017	\$402,234	\$373,304	\$418,385	\$415,358	\$497,771
Contributions in relation to the actuarially determined contribution	1,017,228	1,027,450	480,103	436,383	460,017	402,234	373,304	418,385	415,358	497,771
Contribution excess (deficiency)	\$401,250	\$413,125	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Covered employee payroll	\$2,189,939	\$2,286,480	\$2,201,882	\$2,079,266	\$2,100,013	\$1,962,528	\$1,828,337	\$1,864,481	\$1,906,790	\$2,132,230
Actuarially determined contributions as a percentage of covered employer payroll	28.13%	26.87%	21.80%	20.99%	21.91%	20.50%	20.42%	22.44%	21.78%	23.35%

Notes to Schedule

Valuation date: Actuarially determined contribution rates are calculated as of the June 30, the year prior to the end of the fiscal year in which contributions are reported. Covered employee payroll is as of June 30 of the current fiscal year.

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry age
Amortization method	Level percentage of payroll, closed
Remaining amortization period	25 years as of the June 30, 2019 actuarial valuation
Asset valuation method	4 years smoothed market
Inflation	2.50%
Salary increases	4.0%, including inflation
Investment rate of return	7.5%, net of pension plan investment expense, including inflation, beginning with the 2017 valuation and 7.75% prior
Mortality Table	RP 2000 projected to 2014 beginning with the 2017 valuation, RP 2000 Combined Healthy Mortality Table prior

Table 1
Projection of Total Contributions*
Assuming 25 Year Closed Amortization of UAAL

Year Beg. 7/1	Projected Entry Age AAL	Projected Funding Value of Assets	UAAL	25 Year Closed Amortization	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions
2019	\$27,098,881	\$17,508,058	\$9,590,823	\$564,006	\$120,131	\$684,137	\$160,619	\$844,756
2020	27,570,942	16,951,508	10,619,434	641,256	109,351	750,607	159,124	909,731
2021	28,039,202	17,188,920	10,850,282	673,891	103,166	777,057	151,720	928,777
2022	28,431,403	17,362,764	11,068,639	708,344	95,949	804,293	144,936	949,229
2023	28,771,727	17,501,473	11,270,254	744,638	83,081	827,719	133,612	961,331
2024	29,020,529	17,567,782	11,452,747	782,942	84,040	866,982	135,485	1,002,467
2025	29,280,016	17,670,198	11,609,818	823,193	78,306	901,499	130,485	1,031,984
2026	29,489,466	17,750,213	11,739,253	865,644	76,520	942,164	123,389	1,065,553
2027	29,648,695	17,811,992	11,836,703	910,449	64,276	974,725	101,484	1,076,209
2028	29,609,748	17,707,824	11,901,924	958,152	65,390	1,023,542	103,182	1,126,724
2029	29,554,089	17,630,646	11,923,443	1,008,491	48,547	1,057,038	83,116	1,140,154
2030	29,308,980	17,409,107	11,899,873	1,062,090	44,623	1,106,713	78,589	1,185,302
2031	29,006,123	17,186,073	11,820,050	1,118,842	41,482	1,160,324	71,218	1,231,542
2032	28,606,331	16,928,376	11,677,955	1,179,194	49,144	1,228,338	61,081	1,289,419
2033	28,194,251	16,732,729	11,461,522	1,243,130	50,124	1,293,254	62,256	1,355,510
2034	27,769,193	16,607,325	11,161,868	1,311,088	41,319	1,352,407	48,493	1,400,900
2035	27,179,895	16,406,382	10,773,513	1,384,198	29,572	1,413,770	34,808	1,448,578
2036	26,430,282	16,146,837	10,283,445	1,463,124	30,197	1,493,321	35,507	1,528,828
2037	25,674,110	16,001,611	9,672,499	1,548,041	26,342	1,574,383	31,378	1,605,761
2038	24,865,056	15,938,318	8,926,738	1,640,414	26,897	1,667,311	32,043	1,699,354
2039	24,052,233	16,025,616	8,026,617	1,741,826	16,054	1,757,880	21,342	1,779,222
2040	23,148,385	16,195,098	6,953,287	1,855,937	16,401	1,872,338	21,806	1,894,144
2041	22,255,234	16,577,821	5,677,413	1,987,987	11,626	1,999,613	18,461	2,018,074
2042	21,328,761	17,162,220	4,166,541	2,152,987	11,867	2,164,854	18,856	2,183,710
2043	20,412,141	18,044,694	2,367,447	2,406,844	3,018	2,409,862	7,879	2,417,741

Table 1 (Continued)
Projection of Total Contributions*
Assuming 25 Year Closed Amortization of UAAL

Year Beg. 7/1	Projected Entry Age AAL	Projected Funding Value of Assets	UAAL	25 Year Closed Amortization	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions
2044	\$19,413,898	\$19,244,993	\$168,905	\$171,716	\$3,084	\$174,800	\$8,051	\$182,851
2045	18,439,907	18,320,180	119,727	121,719	3,151	124,870	8,222	133,092
2046	17,494,074	17,380,120	113,954	115,850	1,197	117,047	2,786	119,833
2047	16,516,619	16,405,302	111,317	113,169	1,224	114,393	2,847	117,240
2048	15,568,419	15,462,018	106,401	108,172	1,249	109,421	2,909	112,330
2049	14,650,636	14,549,140	101,496	103,185	775	103,960	1,992	105,952
2050	13,756,589	13,659,710	96,879	98,491	791	99,282	2,033	101,315
2051	12,886,002	12,793,502	92,500	94,039	0	94,039	0	94,039
2052	12,027,917	11,939,448	88,469	89,941	0	89,941	0	89,941
2053	11,203,137	11,119,391	83,746	85,140	0	85,140	0	85,140
2054	10,397,700	10,317,902	79,798	81,126	0	81,126	0	81,126
2055	9,622,209	9,546,777	75,432	76,687	0	76,687	0	76,687
2056	8,880,017	8,809,021	70,996	72,177	0	72,177	0	72,177
2057	8,172,747	8,106,133	66,614	67,723	0	67,723	0	67,723
2058	7,500,466	7,438,117	62,349	63,387	0	63,387	0	63,387
2059	6,858,600	6,800,181	58,419	59,391	0	59,391	0	59,391
2060	6,251,504	6,197,095	54,409	55,314	0	55,314	0	55,314
2061	5,680,010	5,629,531	50,479	51,319	0	51,319	0	51,319
2062	5,143,696	5,097,004	46,692	47,469	0	47,469	0	47,469
2063	4,642,399	4,599,357	43,042	43,758	0	43,758	0	43,758
2064	4,175,335	4,135,769	39,566	40,224	0	40,224	0	40,224
2065	3,742,708	3,706,515	36,193	36,795	0	36,795	0	36,795
2066	3,343,243	3,310,232	33,011	33,560	0	33,560	0	33,560
2067	2,975,363	2,945,332	30,031	30,531	0	30,531	0	30,531
2068	2,638,162	2,610,959	27,203	27,656	0	27,656	0	27,656

Table 1 (Continued)
Projection of Total Contributions*
Assuming 25 Year Closed Amortization of UAAL

Year Beg. 7/1	Projected Entry Age AAL	Projected Funding Value of Assets	UAAL	25 Year Closed Amortization	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions
2069	\$2,329,910	\$2,305,332	\$24,578	\$24,987	\$0	\$24,987	\$0	\$24,987
2070	2,048,808	2,026,681	22,127	22,495	0	22,495	0	22,495
2071	1,793,222	1,773,351	19,871	20,202	0	20,202	0	20,202
2072	1,561,395	1,543,608	17,787	18,083	0	18,083	0	18,083
2073	1,351,996	1,336,140	15,856	16,120	0	16,120	0	16,120
2074	1,163,557	1,149,474	14,083	14,317	0	14,317	0	14,317
2075	994,619	982,174	12,445	12,652	0	12,652	0	12,652
2076	843,906	832,963	10,943	11,125	0	11,125	0	11,125
2077	710,319	700,753	9,566	9,725	0	9,725	0	9,725
2078	592,711	584,412	8,299	8,437	0	8,437	0	8,437
2079	489,980	482,825	7,155	7,274	0	7,274	0	7,274
2080	401,074	394,972	6,102	6,204	0	6,204	0	6,204
2081	324,903	319,736	5,167	5,253	0	5,253	0	5,253
2082	260,356	256,031	4,325	4,397	0	4,397	0	4,397
2083	206,256	202,676	3,580	3,640	0	3,640	0	3,640
2084	161,451	158,516	2,935	2,984	0	2,984	0	2,984
2085	124,849	122,474	2,375	2,415	0	2,415	0	2,415
2086	95,321	93,432	1,889	1,920	0	1,920	0	1,920
2087	71,837	70,343	1,494	1,519	0	1,519	0	1,519
2088	53,444	52,282	1,162	1,181	0	1,181	0	1,181
2089	39,239	38,350	889	904	0	904	0	904
2090	28,441	27,769	672	683	0	683	0	683
2091	20,362	19,861	501	509	0	509	0	509
2092	14,404	14,037	367	373	0	373	0	373
2093	10,074	9,811	263	267	0	267	0	267

Table 1 (Continued)
Projection of Total Contributions*
Assuming 25 Year Closed Amortization of UAAL

Year Beg. 7/1	Projected Entry Age AAL	Projected Funding Value of Assets	UAAL	25 Year Closed Amortization	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions
2094	\$6,977	\$6,788	\$189	\$192	\$0	\$192	\$0	\$192
2095	4,791	4,655	136	138	0	138	0	138
2096	3,262	3,169	93	95	0	95	0	95
2097	2,206	2,143	63	64	0	64	0	64
2098	1,481	1,439	42	43	0	43	0	43
2099	995	964	31	32	0	32	0	32
2100	663	645	18	18	0	18	0	18
2101	440	426	14	14	0	14	0	14
2102	291	282	9	9	0	9	0	9
2103	192	186	6	6	0	6	0	6
2104	125	120	5	5	0	5	0	5
2105	80	76	4	4	0	4	0	4
2106	50	50	0	0	0	0	0	0
2107	31	30	1	1	0	1	0	1
2108	19	18	1	1	0	1	0	1
2109	11	10	1	1	0	1	0	1
2110	7	6	1	1	0	1	0	1
2111	3	5	(2)	(2)	0	0	0	0
2112	2	3	(1)	(1)	0	0	0	0
2113	1	2	(1)	(1)	0	0	0	0
2114	0	1	(1)	(1)	0	0	0	0
2115	0	1	(1)	(1)	0	0	0	0
2116	0	1	(1)	(1)	0	0	0	0
2117	0	1	(1)	(1)	0	0	0	0
2118	0	1	(1)	(1)	0	0	0	0

*The Projection of Contributions uses the plan's actuarial valuation interest and mortality assumptions.

Table 2: Projection of the Pension Plan's Fiduciary Net Position

Year Beg. 7/1	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions* (b)	Projected Benefit Payments** (c)	Projected Administrative Expense*** (d)	Projected Investment Earnings**** (e)	Projected Fiduciary Ending Net Position (a)+(b)+(c)+(d)+(e)
2019	\$16,757,510	\$844,756	\$(1,851,466)	\$(17,690)	\$1,218,398	\$16,951,508
2020	16,951,508	909,731	(1,888,183)	(18,127)	1,233,991	17,188,920
2021	17,188,920	928,777	(1,984,736)	(19,053)	1,248,856	17,362,764
2022	17,362,764	949,229	(2,050,984)	(19,689)	1,260,153	17,501,473
2023	17,501,473	961,331	(2,142,022)	(20,563)	1,267,563	17,567,782
2024	17,567,782	1,002,467	(2,153,044)	(20,669)	1,273,662	17,670,198
2025	17,670,198	1,031,984	(2,210,999)	(21,226)	1,280,256	17,750,213
2026	17,750,213	1,065,553	(2,267,388)	(21,767)	1,285,381	17,811,992
2027	17,811,992	1,076,209	(2,440,794)	(23,432)	1,283,849	17,707,824
2028	17,707,824	1,126,724	(2,457,603)	(23,593)	1,277,294	17,630,646
2029	17,630,646	1,140,154	(2,603,199)	(24,991)	1,266,497	17,409,107
2030	17,409,107	1,185,302	(2,633,483)	(25,281)	1,250,428	17,186,073
2031	17,186,073	1,231,542	(2,696,406)	(25,885)	1,233,052	16,928,376
2032	16,928,376	1,289,419	(2,676,042)	(25,690)	1,216,666	16,732,729
2033	16,732,729	1,355,510	(2,660,436)	(25,540)	1,205,062	16,607,325
2034	16,607,325	1,400,900	(2,768,532)	(26,578)	1,193,267	16,406,382
2035	16,406,382	1,448,578	(2,857,315)	(27,430)	1,176,622	16,146,837
2036	16,146,837	1,528,828	(2,809,079)	(26,967)	1,161,992	16,001,611
2037	16,001,611	1,605,761	(2,796,661)	(26,848)	1,154,455	15,938,318
2038	15,938,318	1,699,354	(2,741,065)	(26,314)	1,155,323	16,025,616
2039	16,025,616	1,779,222	(2,747,964)	(26,380)	1,164,604	16,195,098
2040	16,195,098	1,894,144	(2,670,349)	(25,635)	1,184,563	16,577,821
2041	16,577,821	2,018,074	(2,627,967)	(25,228)	1,219,520	17,162,220
2042	17,162,220	2,183,710	(2,549,302)	(24,473)	1,272,539	18,044,694
2043	18,044,694	2,417,741	(2,540,870)	(24,392)	1,347,820	19,244,993

Table 2: Projection of the Pension Plan's Fiduciary Net Position (Continued)

Year Beg. 7/1	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions* (b)	Projected Benefit Payments** (c)	Projected Administrative Expense*** (d)	Projected Investment Earnings**** (e)	Projected Fiduciary Ending Net Position (a)+(b)+(c)+(d)+(e)
2044	\$19,244,993	\$182,851	\$(2,441,998)	\$(23,443)	\$1,357,777	\$18,320,180
2045	18,320,180	133,092	(2,341,050)	(22,474)	1,290,372	17,380,120
2046	17,380,120	119,833	(2,293,791)	(22,020)	1,221,160	16,405,302
2047	16,405,302	117,240	(2,191,318)	(21,037)	1,151,831	15,462,018
2048	15,462,018	112,330	(2,089,886)	(20,063)	1,084,741	14,549,140
2049	14,549,140	105,952	(1,995,819)	(19,160)	1,019,597	13,659,710
2050	13,659,710	101,315	(1,905,371)	(18,292)	956,140	12,793,502
2051	12,793,502	94,039	(1,824,539)	(17,516)	893,962	11,939,448
2052	11,939,448	89,941	(1,726,872)	(16,578)	833,452	11,119,391
2053	11,119,391	85,140	(1,645,673)	(15,798)	774,842	10,317,902
2054	10,317,902	81,126	(1,555,320)	(14,931)	718,000	9,546,777
2055	9,546,777	76,687	(1,463,853)	(14,053)	663,463	8,809,021
2056	8,809,021	72,177	(1,373,273)	(13,183)	611,391	8,106,133
2057	8,106,133	67,723	(1,285,241)	(12,338)	561,840	7,438,117
2058	7,438,117	63,387	(1,204,398)	(11,562)	514,637	6,800,181
2059	6,800,181	59,391	(1,121,492)	(10,766)	469,781	6,197,095
2060	6,197,095	55,314	(1,040,359)	(9,987)	427,468	5,629,531
2061	5,629,531	51,319	(962,314)	(9,238)	387,706	5,097,004
2062	5,097,004	47,469	(887,071)	(8,516)	350,471	4,599,357
2063	4,599,357	43,758	(815,247)	(7,826)	315,727	4,135,769
2064	4,135,769	40,224	(745,775)	(7,159)	283,456	3,706,515
2065	3,706,515	36,795	(680,165)	(6,530)	253,617	3,310,232
2066	3,310,232	33,560	(618,626)	(5,939)	226,105	2,945,332
2067	2,945,332	30,531	(560,355)	(5,379)	200,830	2,610,959
2068	2,610,959	27,656	(506,121)	(4,859)	177,697	2,305,332

Table 2: Projection of the Pension Plan's Fiduciary Net Position (Continued)

Year Beg. 7/1	Projected Fiduciary Net Position (a)	Projected Total Contributions* (b)	Projected Benefit Payments** (c)	Projected Administrative Expense*** (d)	Projected Investment Earnings**** (e)	Projected Fiduciary Ending Net Position (a)+(b)+(c)+(d)+(e)
2069	\$2,305,332	\$24,987	\$(455,841)	\$(4,376)	\$156,579	\$2,026,681
2070	2,026,681	22,495	(409,247)	(3,929)	137,351	1,773,351
2071	1,773,351	20,202	(366,318)	(3,517)	119,890	1,543,608
2072	1,543,608	18,083	(326,504)	(3,134)	104,087	1,336,140
2073	1,336,140	16,120	(289,844)	(2,783)	89,841	1,149,474
2074	1,149,474	14,317	(256,205)	(2,460)	77,048	982,174
2075	982,174	12,652	(225,307)	(2,163)	65,607	832,963
2076	832,963	11,125	(196,881)	(1,890)	55,436	700,753
2077	700,753	9,725	(170,878)	(1,640)	46,452	584,412
2078	584,412	8,437	(147,186)	(1,413)	38,575	482,825
2079	482,825	7,274	(125,649)	(1,206)	31,728	394,972
2080	394,972	6,204	(106,253)	(1,020)	25,833	319,736
2081	319,736	5,253	(88,915)	(854)	20,811	256,031
2082	256,031	4,397	(73,625)	(707)	16,580	202,676
2083	202,676	3,640	(60,276)	(579)	13,055	158,516
2084	158,516	2,984	(48,714)	(468)	10,156	122,474
2085	122,474	2,415	(38,888)	(373)	7,804	93,432
2086	93,432	1,920	(30,635)	(294)	5,920	70,343
2087	70,343	1,519	(23,784)	(228)	4,432	52,282
2088	52,282	1,181	(18,214)	(175)	3,276	38,350
2089	38,350	904	(13,743)	(132)	2,390	27,769
2090	27,769	683	(10,215)	(98)	1,722	19,861
2091	19,861	509	(7,486)	(72)	1,225	14,037
2092	14,037	373	(5,409)	(52)	862	9,811
2093	9,811	267	(3,853)	(37)	600	6,788

Table 2: Projection of the Pension Plan's Fiduciary Net Position (Continued)

Year Beg. 7/1	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions* (b)	Projected Benefit Payments** (c)	Projected Administrative Expense*** (d)	Projected Investment Earnings**** (e)	Projected Fiduciary Ending Net Position (a)+(b)+(c)+(d)+(e)
2094	\$6,788	\$192	\$(2,713)	\$(26)	\$414	\$4,655
2095	4,655	138	(1,889)	(18)	283	3,169
2096	3,169	95	(1,301)	(12)	192	2,143
2097	2,143	64	(888)	(9)	129	1,439
2098	1,439	43	(599)	(6)	87	964
2099	964	32	(405)	(4)	58	645
2100	645	18	(273)	(3)	39	426
2101	426	14	(182)	(2)	26	282
2102	282	9	(121)	(1)	17	186
2103	186	6	(82)	(1)	11	120
2104	120	5	(55)	(1)	7	76
2105	76	4	(35)	0	5	50
2106	50	0	(23)	0	3	30
2107	30	1	(15)	0	2	18
2108	18	1	(10)	0	1	10
2109	10	1	(6)	0	1	6
2110	6	1	(2)	0	0	5
2111	5	0	(2)	0	0	3
2112	3	0	(1)	0	0	2
2113	2	0	(1)	0	0	1
2114	1	0	0	0	0	1
2115	1	0	0	0	0	1
2116	1	0	0	0	0	1
2117	1	0	0	0	0	1
2118	1	0	0	0	0	1

*From Table 1.

**Assumed Mortality for Benefit Payout Projection was based on the RP 2000 Mortality Table projected to 2014.

***Administrative expense was assumed to be 0.96% of pension payroll.

****Long term expected rate of return on pension plan investments was 7.50%.

Table 3: Actuarial Present Values of Projected Benefit Payments

Year (a)	Projected Beginning Fiduciary Net Position* (b)	Projected Benefit Payments (c)	"Funded" Portion of Benefit Payments (d)	"Unfunded" Portion of Benefit Payments (e)	Present Value of "Funded" Benefits Payments** (f)	Present Value of "Unfunded" Benefit Payments*** (g)=(e)/(1+x.xx%)^(a)	Present Value Using the Single Discount Rate**** (h) = (c)/(1 + y.yy%)^(a)
1	\$16,757,510	\$1,851,466	\$1,851,466	\$0	\$1,722,294	\$0	\$1,722,294
2	16,951,508	1,888,183	1,888,183	0	1,633,906	0	1,633,906
3	17,188,920	1,984,736	1,984,736	0	1,597,634	0	1,597,634
4	17,362,764	2,050,984	2,050,984	0	1,535,778	0	1,535,778
5	17,501,473	2,142,022	2,142,022	0	1,492,044	0	1,492,044
6	17,567,782	2,153,044	2,153,044	0	1,395,090	0	1,395,090
7	17,670,198	2,210,999	2,210,999	0	1,332,690	0	1,332,690
8	17,750,213	2,267,388	2,267,388	0	1,271,330	0	1,271,330
9	17,811,992	2,440,794	2,440,794	0	1,273,078	0	1,273,078
10	17,707,824	2,457,603	2,457,603	0	1,192,414	0	1,192,414
11	17,630,646	2,603,199	2,603,199	0	1,174,936	0	1,174,936
12	17,409,107	2,633,483	2,633,483	0	1,105,679	0	1,105,679
13	17,186,073	2,696,406	2,696,406	0	1,053,114	0	1,053,114
14	16,928,376	2,676,042	2,676,042	0	972,242	0	972,242
15	16,732,729	2,660,436	2,660,436	0	899,137	0	899,137
16	16,607,325	2,768,532	2,768,532	0	870,390	0	870,390
17	16,406,382	2,857,315	2,857,315	0	835,630	0	835,630
18	16,146,837	2,809,079	2,809,079	0	764,208	0	764,208
19	16,001,611	2,796,661	2,796,661	0	707,749	0	707,749
20	15,938,318	2,741,065	2,741,065	0	645,283	0	645,283
21	16,025,616	2,747,964	2,747,964	0	601,774	0	601,774
22	16,195,098	2,670,349	2,670,349	0	543,979	0	543,979
23	16,577,821	2,627,967	2,627,967	0	497,995	0	497,995
24	17,162,220	2,549,302	2,549,302	0	449,385	0	449,385
25	18,044,694	2,540,870	2,540,870	0	416,649	0	416,649

Table 3: Actuarial Present Values of Projected Benefit Payments (Continued)

Year (a)	Projected Beginning Fiduciary Net Position* (b)	Projected Benefit Payments (c)	"Funded" Portion of Benefit Payments (d)	"Unfunded" Portion of Benefit Payments (e)	Present Value of "Funded" Benefits Payments** (f)	Present Value of "Unfunded" Benefit Payments*** (g)=(e)/(1+x.xx%)^(a)	Present Value Using the Single Discount Rate**** (h) = (c)/(1 + y.yy%)^(a)
26	\$19,244,993	\$2,441,998	\$2,441,998	\$0	\$372,499	\$0	\$372,499
27	18,320,180	2,341,050	2,341,050	0	332,187	0	332,187
28	17,380,120	2,293,791	2,293,791	0	302,773	0	302,773
29	16,405,302	2,191,318	2,191,318	0	269,067	0	269,067
30	15,462,018	2,089,886	2,089,886	0	238,709	0	238,709
31	14,549,140	1,995,819	1,995,819	0	212,060	0	212,060
32	13,659,710	1,905,371	1,905,371	0	188,325	0	188,325
33	12,793,502	1,824,539	1,824,539	0	167,754	0	167,754
34	11,939,448	1,726,872	1,726,872	0	147,697	0	147,697
35	11,119,391	1,645,673	1,645,673	0	130,932	0	130,932
36	10,317,902	1,555,320	1,555,320	0	115,111	0	115,111
37	9,546,777	1,463,853	1,463,853	0	100,782	0	100,782
38	8,809,021	1,373,273	1,373,273	0	87,950	0	87,950
39	8,106,133	1,285,241	1,285,241	0	76,569	0	76,569
40	7,438,117	1,204,398	1,204,398	0	66,747	0	66,747
41	6,800,181	1,121,492	1,121,492	0	57,816	0	57,816
42	6,197,095	1,040,359	1,040,359	0	49,892	0	49,892
43	5,629,531	962,314	962,314	0	42,929	0	42,929
44	5,097,004	887,071	887,071	0	36,812	0	36,812
45	4,599,357	815,247	815,247	0	31,471	0	31,471
46	4,135,769	745,775	745,775	0	26,780	0	26,780
47	3,706,515	680,165	680,165	0	22,720	0	22,720
48	3,310,232	618,626	618,626	0	19,223	0	19,223
49	2,945,332	560,355	560,355	0	16,198	0	16,198
50	2,610,959	506,121	506,121	0	13,609	0	13,609

Table 3: Actuarial Present Values of Projected Benefit Payments (Continued)

	Projected Beginning Fiduciary Net Position*	Projected Benefit Payments	"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefits Payments**	Present Value of "Unfunded" Benefit Payments***	Present Value Using the Single Discount Rate****
.	(b)	(c)	(d)	(e)	(f)	(g)=(e)/(1+x.xx%)^(a)	(h) = (c)/(1 + y.yy%)^(a)
51	\$2,305,332	\$455,841	\$455,841	\$0	\$11,402	\$0	\$11,402
52	2,026,681	409,247	409,247	0	9,522	0	9,522
53	1,773,351	366,318	366,318	0	7,929	0	7,929
54	1,543,608	326,504	326,504	0	6,574	0	6,574
55	1,336,140	289,844	289,844	0	5,429	0	5,429
56	1,149,474	256,205	256,205	0	4,464	0	4,464
57	982,174	225,307	225,307	0	3,652	0	3,652
58	832,963	196,881	196,881	0	2,968	0	2,968
59	700,753	170,878	170,878	0	2,397	0	2,397
60	584,412	147,186	147,186	0	1,920	0	1,920
61	482,825	125,649	125,649	0	1,525	0	1,525
62	394,972	106,253	106,253	0	1,200	0	1,200
63	319,736	88,915	88,915	0	934	0	934
64	256,031	73,625	73,625	0	719	0	719
65	202,676	60,276	60,276	0	548	0	548
66	158,516	48,714	48,714	0	412	0	412
67	122,474	38,888	38,888	0	306	0	306
68	93,432	30,635	30,635	0	224	0	224
69	70,343	23,784	23,784	0	162	0	162
70	52,282	18,214	18,214	0	115	0	115
71	38,350	13,743	13,743	0	81	0	81
72	27,769	10,215	10,215	0	56	0	56
73	19,861	7,486	7,486	0	38	0	38
74	14,037	5,409	5,409	0	26	0	26
75	9,811	3,853	3,853	0	17	0	17

Table 3: Actuarial Present Values of Projected Benefit Payments (Continued)

Year (a)	Projected Beginning Fiduciary Net Position* (b)	Projected Benefit Payments (c)	"Funded" Portion of Benefit Payments (d)	"Unfunded" Portion of Benefit Payments (e)	Present Value of "Funded" Benefits Payments** (f)	Present Value of "Unfunded" Benefit Payments*** (g)=(e)/(1+x.xx%)^(a)	Present Value Using the Single Discount Rate**** (h) = (c)/(1 + y.yy%)^(a)
76	\$6,788	\$2,713	\$2,713	\$0	\$11	\$0	\$11
77	4,655	1,889	1,889	0	7	0	7
78	3,169	1,301	1,301	0	5	0	5
79	2,143	888	888	0	3	0	3
80	1,439	599	599	0	2	0	2
81	964	405	405	0	1	0	1
82	645	273	273	0	1	0	1
83	426	182	182	0	0	0	0
84	282	121	121	0	0	0	0
85	186	82	82	0	0	0	0
86	120	55	55	0	0	0	0
87	76	35	35	0	0	0	0
88	50	23	23	0	0	0	0
89	30	15	15	0	0	0	0
90	18	10	10	0	0	0	0
91	10	6	6	0	0	0	0
92	6	2	2	0	0	0	0
93	5	2	2	0	0	0	0
94	3	1	1	0	0	0	0
95	2	1	1	0	0	0	0
96	1	0	0	0	0	0	0
97	1	0	0	0	0	0	0
98	1	0	0	0	0	0	0
99	1	0	0	0	0	0	0
100	1	0	0	0	0	0	0
					\$29,173,670	\$0	\$29,173,670

* From Table 2.

**7.50% was the assumed rate of return used to project the plan's fiduciary net position and is the discount rate used for column (f).

***3.13% Fidelity Municipal Bond 20 Year GO AA Index as of June 28, 2019

****7.50% was the single discount rate that produces a total actuarial present value that equals the sum of the actuarial present values of "funded" and "unfunded" benefit payments in columns (f) and (g).