

City of Taylor Police and Fire Retirement System
Actuarial Information for GASB Statements 67/68
June 30, 2018





October 22, 2018

The Retirement Board
The City of Taylor Police and Fire Retirement System
Taylor, Michigan 48180-4116

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, 2018.

Respectfully submitted,

A handwritten signature in black ink that reads 'Denise M. Jones'.

Denise M. Jones
Senior Consultant

A handwritten signature in black ink that reads 'Sandra W. Rodwan'.

Sandra W. Rodwan
Member, American Academy of Actuaries

Net Pension Liability

The components of the net pension liability at June 30, 2018 were as follows:

Total pension liability	\$196,435,405
Plan fiduciary net position	128,945,416
City's net pension liability	67,489,989
Plan fiduciary net position as a percentage of the total pension liability	65.64%
Covered payroll	\$8,898,318
City's net pension liability as a percentage of covered payroll	758.5%

Actuarial assumptions. The total pension liability was determined based on the annual actuarial valuation as of June 30, 2017, rolled forward to June 30, 2018. The following actuarial assumptions were applied to compute the total pension liability:

Actuarial cost method	Entry Age
Inflation	3.0%
Salary Increases	0.0%-6.5% (includes inflation)
Cost of living assumption adjustments	None

Mortality rates were based on the RP 2014 Mortality Table with MP 2017.

Discount rate. The discount rate used to measure the total pension liability was 7.22%. 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 7.22% 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 6.22%	GASB 67 Computed Rate 7.22%	1% Increase 8.22%
City's net pension liability	\$89,547,479	\$67,489,989	\$49,143,020

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

	Year Ended <u>6/30/2018</u>
Total pension liability (TPL)	
Service cost	\$3,255,907
Interest	11,833,236
Changes in benefit terms	-
Differences between expected and actual experience	4,074,015
Changes in assumptions used for TPL	
Discount rate assumption	(45,109,082)
Mortality assumption	9,591,579
Total due to TPL assumption changes	(35,517,503)
Benefit payments, including refunds of member contributions	(13,528,538)
Net change in total pension liability	(\$29,882,883)
Total pension liability-beginning	\$226,318,288
Total pension liability-ending (a)	\$196,435,405
Plan fiduciary net position	
Contributions-employer	4,987,980
Contributions-member	715,020
Net investment income	14,355,591
Benefit payments, including refunds of member contributions	(13,528,538)
Administrative Expense	(65,886)
Other	215
Net change in plan fiduciary net position	6,464,382
Plan fiduciary net position-beginning	122,481,034
Plan fiduciary net position-ending (b)	128,945,416
City's net pension liability-ending (a)-(b)	\$67,489,989
Plan fiduciary net position as a percentage of the total pension liability	65.64%
Covered employee payroll	\$8,898,318
City's net pension liability as a percentage of covered employee payroll	758.5%

Additional Required Disclosures

	<u>June 30, 2018</u>
Total expected remaining service lives	
Active Participants	881.8
Inactive Participants	0
(a) Total expected remaining service lives	881.8
Number of Participants	
Active	109
Retired	221
Vested	10
(b) Total	340
(c) Average of expected remaining service lives of all active and inactive participants (a)/(b)	2.6
(d1) Difference between expected and actual demographic experience	4,074,015
(d2) Portion allocated to expense (d1)/(c)	1,566,929
(d3) Deferred portion (d1)-(d2)	2,507,086
(e1) Changes in assumptions	(35,517,503)
(e2) Portion allocated to expense (e1)/(c)	(13,660,578)
(e3) Deferred portion (e1)-(e2)	(21,856,925)
(f1) Difference between expected and actual investment experience	(8,013,946)
(f2) Portion allocated to expense (f1)/5	(1,602,789)
(f3) Deferred portion (f1)-(f2)	(6,411,156)
(g) Total Deferred Portion	(25,760,995)

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

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Actuarially determined contribution	\$4,987,980	\$5,190,370	\$5,588,834	\$5,409,465	\$5,145,379	\$6,070,834	\$6,059,600	\$5,917,992	\$5,613,904	\$5,483,018
Contributions in relation to the actuarially determined contribution	4,987,980	5,190,370	5,588,834	5,409,465	5,145,379	6,070,834	6,059,600	5,917,992	5,613,904	5,483,018
Contribution excess (deficiency)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
 Covered employee payroll	 \$8,898,318	 \$8,050,037	 \$9,360,386	 \$9,739,971	 \$9,328,103	 \$7,846,245	 \$12,007,248	 \$12,813,161	 \$13,889,065	 \$13,999,934
 Actuarially determined contributions as a percentage of covered employee payroll	 56.06%	 64.48%	 59.71%	 55.54%	 55.16%	 77.37%	 50.47%	 46.19%	 40.42%	 39.16%

Notes to Schedule

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

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry age
Amortization method	Level percentage of payroll, closed, beginning with the 6/30/17 fiscal year.
Remaining amortization period	22 as of the 6/30/17 valuation
Asset valuation method	5 years smoothed market
Inflation	3.00%
Salary increases	0% - 6.5%, including inflation
Investment rate of return	7.25% beginning with the 6/30/17 valuation, 7.6%, prior
Mortality Table	RP 2014 beginning with the 6/30/2017 valuation, RP 2000 Combined Healthy Mortality prior.

Table 1
Projection of Total Contributions*
Assuming 21 Year Closed Amortization of UAAL

Year Beg. 7/1	Projected Entry Age AAL	Projected Funding Value of Assets	UAAL	21 Year Closed Amortization	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions
2018	\$189,890,204	\$123,671,293	\$66,218,911	\$4,477,120	\$2,099,288	\$6,576,408	\$745,670	\$7,322,078
2019	193,484,813	132,103,550	61,381,263	4,289,878	1,982,508	6,272,386	713,113	6,985,499
2020	196,440,149	134,354,582	62,085,567	4,496,085	1,641,554	6,137,639	610,761	6,748,400
2021	198,073,390	135,398,623	62,674,767	4,715,539	1,440,967	6,156,506	546,744	6,703,250
2022	198,990,641	135,875,827	63,114,814	4,948,369	1,250,752	6,199,121	486,706	6,685,827
2023	199,073,770	135,685,676	63,388,094	5,196,262	1,040,472	6,236,734	420,349	6,657,083
2024	198,220,377	134,750,695	63,469,682	5,460,808	785,025	6,245,833	338,368	6,584,201
2025	196,395,327	133,070,210	63,325,117	5,743,322	608,680	6,352,002	281,154	6,633,156
2026	193,880,604	130,964,588	62,916,016	6,045,345	531,551	6,576,896	256,992	6,833,888
2027	191,038,115	128,839,133	62,198,982	6,368,659	483,121	6,851,780	243,548	7,095,328
2028	187,978,626	126,848,942	61,129,684	6,715,876	448,084	7,163,960	234,840	7,398,800
2029	184,751,597	125,092,717	59,658,880	7,090,389	443,895	7,534,284	236,538	7,770,822
2030	181,496,781	123,768,543	57,728,238	7,496,300	460,368	7,956,668	245,716	8,202,384
2031	178,256,957	122,982,606	55,274,351	7,939,542	480,259	8,419,801	256,332	8,676,133
2032	175,115,969	122,896,875	52,219,094	8,427,680	500,794	8,928,474	267,294	9,195,768
2033	172,096,133	123,622,700	48,473,433	8,972,191	522,392	9,494,583	278,822	9,773,405
2034	169,219,934	125,290,031	43,929,903	9,590,908	545,259	10,136,167	291,036	10,427,203
2035	166,513,120	128,058,751	38,454,369	10,314,137	569,188	10,883,325	303,806	11,187,131
2036	163,989,996	132,118,163	31,871,833	11,201,210	588,504	11,789,714	314,204	12,103,918
2037	161,585,308	137,649,706	23,935,602	12,398,799	575,504	12,974,303	308,497	13,282,800
2038	159,086,277	144,854,493	14,231,784	14,486,548	514,828	15,001,376	276,098	15,277,474
2039	156,339,116	154,629,158	1,709,958	1,740,568	462,327	2,202,895	248,258	2,451,153
2040	153,231,474	151,689,513	1,541,961	1,569,564	346,585	1,916,149	187,779	2,103,928
2041	149,567,991	147,976,722	1,591,269	1,619,754	248,434	1,868,188	135,366	2,003,554
2042	145,444,729	143,805,238	1,639,491	1,668,840	174,558	1,843,398	95,996	1,939,394

Table 1 (Continued)
Projection of Total Contributions*
Assuming 21 Year Closed Amortization of UAAL

Year Beg. 7/1	Projected Entry Age AAL	Projected Funding Value of Assets	UAAL	21 Year Closed Amortization	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions
2043	\$140,938,000	\$139,253,248	\$1,684,752	\$1,714,911	\$100,357	\$1,815,268	\$55,150	\$1,870,418
2044	136,118,580	134,394,769	1,723,811	1,754,669	66,524	1,821,193	36,382	1,857,575
2045	131,136,782	129,378,399	1,758,383	1,789,860	33,000	1,822,860	18,338	1,841,198
2046	126,030,846	124,241,964	1,788,882	1,820,905	17,739	1,838,644	10,004	1,848,648
2047	120,873,425	119,056,942	1,816,483	1,849,000	3,870	1,852,870	2,252	1,855,122
2048	115,687,884	113,846,019	1,841,865	1,874,836	0	1,874,836	0	1,874,836
2049	110,528,273	108,662,992	1,865,281	1,898,671	0	1,898,671	0	1,898,671
2050	105,416,508	103,528,179	1,888,329	1,922,132	0	1,922,132	0	1,922,132
2051	100,355,947	98,443,760	1,912,187	1,946,417	0	1,946,417	0	1,946,417
2052	95,350,896	93,413,450	1,937,446	1,972,128	0	1,972,128	0	1,972,128
2053	90,406,683	88,442,100	1,964,583	1,999,751	0	1,999,751	0	1,999,751
2054	85,530,350	83,536,552	1,993,798	2,029,489	0	2,029,489	0	2,029,489
2055	80,730,095	78,704,896	2,025,199	2,061,452	0	2,061,452	0	2,061,452
2056	76,015,302	73,956,722	2,058,580	2,095,431	0	2,095,431	0	2,095,431
2057	71,396,292	69,302,804	2,093,488	2,130,964	0	2,130,964	0	2,130,964
2058	66,884,005	64,754,871	2,129,134	2,167,248	0	2,167,248	0	2,167,248
2059	62,489,677	60,325,211	2,164,466	2,203,212	0	2,203,212	0	2,203,212
2060	58,224,478	56,026,289	2,198,189	2,237,539	0	2,237,539	0	2,237,539
2061	54,099,092	51,870,393	2,228,699	2,268,595	0	2,268,595	0	2,268,595
2062	50,123,343	47,868,941	2,254,402	2,294,758	0	2,294,758	0	2,294,758
2063	46,305,857	44,031,985	2,273,872	2,314,577	0	2,314,577	0	2,314,577
2064	42,653,793	40,367,983	2,285,810	2,326,728	0	2,326,728	0	2,326,728
2065	39,172,771	36,883,580	2,289,191	2,330,170	0	2,330,170	0	2,330,170
2066	35,866,743	33,583,539	2,283,204	2,324,076	0	2,324,076	0	2,324,076
2067	32,738,018	30,470,610	2,267,408	2,307,997	0	2,307,997	0	2,307,997

Table 1 (Continued)
Projection of Total Contributions*
Assuming 21 Year Closed Amortization of UAAL

Year Beg. 7/1	Projected Entry Age AAL	Projected Funding Value of Assets	UAAL	21 Year Closed Amortization	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions
2068	\$30,498,867	\$27,545,534	\$2,953,333	\$3,006,201	\$0	\$3,006,201	\$0	\$3,006,201
2069	27,689,167	25,557,715	2,131,452	2,169,607	0	2,169,607	0	2,169,607
2070	25,052,366	22,978,279	2,074,087	2,111,215	0	2,111,215	0	2,111,215
2071	22,585,176	20,562,500	2,022,676	2,058,884	0	2,058,884	0	2,058,884
2072	20,283,183	18,318,540	1,964,643	1,999,812	0	1,999,812	0	1,999,812
2073	18,141,087	16,240,224	1,900,863	1,934,890	0	1,934,890	0	1,934,890
2074	16,152,969	14,320,464	1,832,505	1,865,309	0	1,865,309	0	1,865,309
2075	14,312,603	12,551,827	1,760,776	1,792,296	0	1,792,296	0	1,792,296
2076	12,613,729	10,926,906	1,686,823	1,717,019	0	1,717,019	0	1,717,019
2077	11,050,327	9,438,521	1,611,806	1,640,659	0	1,640,659	0	1,640,659
2078	9,616,810	8,079,971	1,536,839	1,564,350	0	1,564,350	0	1,564,350
2079	8,308,121	6,845,087	1,463,034	1,489,224	0	1,489,224	0	1,489,224
2080	7,119,703	5,728,486	1,391,217	1,416,121	0	1,416,121	0	1,416,121
2081	6,047,353	4,725,415	1,321,938	1,345,602	0	1,345,602	0	1,345,602
2082	5,087,042	3,831,669	1,255,373	1,277,845	0	1,277,845	0	1,277,845
2083	4,234,640	3,043,384	1,191,256	1,212,581	0	1,212,581	0	1,212,581
2084	3,485,606	2,356,803	1,128,803	1,149,010	0	1,149,010	0	1,149,010
2085	2,834,769	1,767,847	1,066,922	1,086,021	0	1,086,021	0	1,086,021
2086	2,276,230	1,271,654	1,004,576	1,022,559	0	1,022,559	0	1,022,559
2087	1,803,283	862,632	940,651	957,490	0	957,490	0	957,490
2088	1,408,526	534,312	874,214	889,863	0	889,863	0	889,863
2089	1,084,044	279,267	804,777	819,183	0	819,183	0	819,183
2090	821,597	89,182	732,415	745,526	0	745,526	0	745,526
2091	612,857	0	612,857	623,828	0	623,828	0	623,828
2092	449,711	0	449,711	457,761	0	457,761	0	457,761

Table 1 (Continued)
Projection of Total Contributions*
Assuming 21 Year Closed Amortization of UAAL

Year Beg. 7/1	Projected Entry Age AAL	Projected Funding Value of Assets	UAAL	21 Year Closed Amortization	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions
2093	\$324,486	\$0	\$324,486	\$330,295	\$0	\$330,295	\$0	\$330,295
2094	230,133	0	230,133	234,253	0	234,253	0	234,253
2095	160,373	0	160,373	163,244	0	163,244	0	163,244
2096	109,787	0	109,787	111,752	0	111,752	0	111,752
2097	73,802	0	73,802	75,123	0	75,123	0	75,123
2098	48,714	0	48,714	49,586	0	49,586	0	49,586
2099	31,568	0	31,568	32,133	0	32,133	0	32,133
2100	20,074	0	20,074	20,433	0	20,433	0	20,433
2101	12,529	0	12,529	12,753	0	12,753	0	12,753
2102	7,670	0	7,670	7,807	0	7,807	0	7,807
2103	4,599	0	4,599	4,681	0	4,681	0	4,681
2104	2,702	0	2,702	2,750	0	2,750	0	2,750
2105	1,553	0	1,553	1,581	0	1,581	0	1,581
2106	870	0	870	886	0	886	0	886
2107	476	0	476	485	0	485	0	485
2108	252	0	252	257	0	257	0	257
2109	131	0	131	133	0	133	0	133
2110	63	0	63	64	0	64	0	64
2111	30	0	30	31	0	31	0	31
2112	15	0	15	15	0	15	0	15
2113	7	0	7	7	0	7	0	7
2114	3	0	3	3	0	3	0	3
2115	1	0	1	1	0	1	0	1
2116	0	0	0	0	0	0	0	0
2117	0	0	0	0	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)
2018	\$128,945,416	\$7,322,078	\$(13,230,048)	\$(65,886)	\$9,131,990	\$132,103,550
2019	132,103,550	6,985,499	(13,985,751)	(69,929)	9,321,213	134,354,582
2020	134,354,582	6,748,400	(15,065,512)	(75,328)	9,436,481	135,398,623
2021	135,398,623	6,703,250	(15,637,555)	(78,188)	9,489,697	135,875,827
2022	135,875,827	6,685,827	(16,294,246)	(81,471)	9,499,739	135,685,676
2023	135,685,676	6,657,083	(16,967,606)	(84,838)	9,460,380	134,750,695
2024	134,750,695	6,584,201	(17,545,843)	(87,729)	9,368,886	133,070,210
2025	133,070,210	6,633,156	(17,885,789)	(89,429)	9,236,440	130,964,588
2026	130,964,588	6,833,888	(17,957,982)	(89,790)	9,088,429	128,839,133
2027	128,839,133	7,095,328	(17,940,274)	(89,701)	8,944,456	126,848,942
2028	126,848,942	7,398,800	(17,879,029)	(89,395)	8,813,399	125,092,717
2029	125,092,717	7,770,822	(17,712,077)	(88,560)	8,705,641	123,768,543
2030	123,768,543	8,202,384	(17,532,484)	(87,662)	8,631,825	122,982,606
2031	122,982,606	8,676,133	(17,276,813)	(86,384)	8,601,333	122,896,875
2032	122,896,875	9,195,768	(17,008,625)	(85,043)	8,623,725	123,622,700
2033	123,622,700	9,773,405	(16,729,867)	(83,649)	8,707,442	125,290,031
2034	125,290,031	10,427,203	(16,438,911)	(82,195)	8,862,623	128,058,751
2035	128,058,751	11,187,131	(16,148,461)	(80,742)	9,101,484	132,118,163
2036	132,118,163	12,103,918	(15,929,720)	(79,649)	9,436,994	137,649,706
2037	137,649,706	13,282,800	(15,881,142)	(79,406)	9,882,535	144,854,493
2038	144,854,493	15,277,474	(15,899,819)	(79,499)	10,476,509	154,629,158
2039	154,629,158	2,451,153	(16,026,278)	(80,131)	10,715,611	151,689,513
2040	151,689,513	2,103,928	(16,218,522)	(81,093)	10,482,896	147,976,722
2041	147,976,722	2,003,554	(16,300,624)	(81,503)	10,207,089	143,805,238
2042	143,805,238	1,939,394	(16,311,750)	(81,559)	9,901,925	139,253,248

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)
2043	\$139,253,248	\$1,870,418	\$(16,220,523)	\$(81,103)	\$9,572,729	\$134,394,769
2044	134,394,769	1,857,575	(16,021,127)	(80,106)	9,227,288	129,378,399
2045	129,378,399	1,841,198	(15,770,902)	(78,855)	8,872,124	124,241,964
2046	124,241,964	1,848,648	(15,467,392)	(77,337)	8,511,059	119,056,942
2047	119,056,942	1,855,122	(15,137,745)	(75,689)	8,147,389	113,846,019
2048	113,846,019	1,874,836	(14,767,813)	(73,839)	7,783,789	108,662,992
2049	108,662,992	1,898,671	(14,384,414)	(71,922)	7,422,852	103,528,179
2050	103,528,179	1,922,132	(14,001,904)	(70,010)	7,065,363	98,443,760
2051	98,443,760	1,946,417	(13,620,157)	(68,101)	6,711,531	93,413,450
2052	93,413,450	1,972,128	(13,238,937)	(66,195)	6,361,654	88,442,100
2053	88,442,100	1,999,751	(12,857,154)	(64,286)	6,016,141	83,536,552
2054	83,536,552	2,029,489	(12,474,289)	(62,371)	5,675,515	78,704,896
2055	78,704,896	2,061,452	(12,089,572)	(60,448)	5,340,394	73,956,722
2056	73,956,722	2,095,431	(11,702,328)	(58,512)	5,011,491	69,302,804
2057	69,302,804	2,130,964	(11,311,930)	(56,560)	4,689,593	64,754,871
2058	64,754,871	2,167,248	(10,917,859)	(54,589)	4,375,540	60,325,211
2059	60,325,211	2,203,212	(10,519,732)	(52,599)	4,070,197	56,026,289
2060	56,026,289	2,237,539	(10,117,281)	(50,586)	3,774,432	51,870,393
2061	51,870,393	2,268,595	(9,710,566)	(48,553)	3,489,072	47,868,941
2062	47,868,941	2,294,758	(9,300,084)	(46,500)	3,214,870	44,031,985
2063	44,031,985	2,314,577	(8,886,618)	(44,433)	2,952,472	40,367,983
2064	40,367,983	2,326,728	(8,471,182)	(42,356)	2,702,407	36,883,580
2065	36,883,580	2,330,170	(8,055,010)	(40,275)	2,465,074	33,583,539
2066	33,583,539	2,324,076	(7,639,543)	(38,198)	2,240,736	30,470,610
2067	30,470,610	2,307,997	(7,226,456)	(36,132)	2,029,515	27,545,534

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)
2068	\$27,545,534	\$3,006,201	\$(6,817,585)	\$(34,088)	\$1,857,653	\$25,557,715
2069	25,557,715	2,169,607	(6,414,851)	(32,074)	1,697,882	22,978,279
2070	22,978,279	2,111,215	(6,020,033)	(30,100)	1,523,139	20,562,500
2071	20,562,500	2,058,884	(5,634,803)	(28,174)	1,360,133	18,318,540
2072	18,318,540	1,999,812	(5,260,755)	(26,304)	1,208,931	16,240,224
2073	16,240,224	1,934,890	(4,899,225)	(24,496)	1,069,071	14,320,464
2074	14,320,464	1,865,309	(4,551,234)	(22,756)	940,044	12,551,827
2075	12,551,827	1,792,296	(4,217,461)	(21,087)	821,331	10,926,906
2076	10,926,906	1,717,019	(3,898,333)	(19,492)	712,421	9,438,521
2077	9,438,521	1,640,659	(3,594,069)	(17,970)	612,830	8,079,971
2078	8,079,971	1,564,350	(3,304,817)	(16,524)	522,107	6,845,087
2079	6,845,087	1,489,224	(3,030,520)	(15,153)	439,848	5,728,486
2080	5,728,486	1,416,121	(2,771,034)	(13,855)	365,697	4,725,415
2081	4,725,415	1,345,602	(2,526,061)	(12,630)	299,343	3,831,669
2082	3,831,669	1,277,845	(2,295,156)	(11,476)	240,502	3,043,384
2083	3,043,384	1,212,581	(2,077,683)	(10,388)	188,909	2,356,803
2084	2,356,803	1,149,010	(1,872,890)	(9,364)	144,288	1,767,847
2085	1,767,847	1,086,021	(1,680,141)	(8,401)	106,328	1,271,654
2086	1,271,654	1,022,559	(1,498,748)	(7,494)	74,661	862,632
2087	862,632	957,490	(1,328,038)	(6,640)	48,868	534,312
2088	534,312	889,863	(1,167,531)	(5,838)	28,461	279,267
2089	279,267	819,183	(1,017,072)	(5,085)	12,889	89,182
2090	89,182	745,526	(876,842)	(4,384)	1,547	0
2091	0	623,828	(747,134)	(3,736)	0	0
2092	0	457,761	(628,416)	(3,142)	0	0

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)
2093	\$0	\$330,295	\$(520,996)	\$(2,605)	\$0	\$0
2094	0	234,253	(425,374)	(2,127)	0	0
2095	0	163,244	(341,672)	(1,708)	0	0
2096	0	111,752	(269,719)	(1,349)	0	0
2097	0	75,123	(209,006)	(1,045)	0	0
2098	0	49,586	(158,936)	(795)	0	0
2099	0	32,133	(118,466)	(592)	0	0
2100	0	20,433	(86,554)	(433)	0	0
2101	0	12,753	(61,943)	(310)	0	0
2102	0	7,807	(43,394)	(217)	0	0
2103	0	4,681	(29,775)	(149)	0	0
2104	0	2,750	(19,972)	(100)	0	0
2105	0	1,581	(13,131)	(66)	0	0
2106	0	886	(8,361)	(42)	0	0
2107	0	485	(5,203)	(26)	0	0
2108	0	257	(3,168)	(16)	0	0
2109	0	133	(1,852)	(9)	0	0
2110	0	64	(998)	(5)	0	0
2111	0	31	(506)	(3)	0	0
2112	0	15	(292)	(1)	0	0
2113	0	7	(161)	(1)	0	0
2114	0	3	(85)	0	0	0
2115	0	1	(44)	0	0	0
2116	0	0	0	0	0	0
2117	0	0	0	0	0	0

*From Table 1.

**Assumed Mortality for Benefit Payout Projection was based on the RP 2014 Mortality Table with MP 2017.

***Administrative expense was assumed to be 0.50% of pension payroll.

****Long term expected rate of return on pension plan investments was 7.25%.

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	\$128,945,416	\$13,230,048	\$13,230,048	\$0	\$12,335,709	\$0	\$12,338,948
2	132,103,550	13,985,751	13,985,751	0	12,158,813	0	12,165,199
3	134,354,582	15,065,512	15,065,512	0	12,212,146	0	12,221,769
4	135,398,623	15,637,555	15,637,555	0	11,818,970	0	11,831,389
5	135,875,827	16,294,246	16,294,246	0	11,482,799	0	11,497,883
6	135,685,676	16,967,606	16,967,606	0	11,149,022	0	11,166,598
7	134,750,695	17,545,843	17,545,843	0	10,749,621	0	10,769,395
8	133,070,210	17,885,789	17,885,789	0	10,217,148	0	10,238,631
9	130,964,588	17,957,982	17,957,982	0	9,564,931	0	9,587,558
10	128,839,133	17,940,274	17,940,274	0	8,909,556	0	8,932,978
11	126,848,942	17,879,029	17,879,029	0	8,278,919	0	8,302,863
12	125,092,717	17,712,077	17,712,077	0	7,647,190	0	7,671,321
13	123,768,543	17,532,484	17,532,484	0	7,057,949	0	7,082,080
14	122,982,606	17,276,813	17,276,813	0	6,484,872	0	6,508,752
15	122,896,875	17,008,625	17,008,625	0	5,952,641	0	5,976,130
16	123,622,700	16,729,867	16,729,867	0	5,459,284	0	5,482,265
17	125,290,031	16,438,911	16,438,911	0	5,001,715	0	5,024,089
18	128,058,751	16,148,461	16,148,461	0	4,581,205	0	4,602,906
19	132,118,163	15,929,720	15,929,720	0	4,213,659	0	4,234,731
20	137,649,706	15,881,142	15,881,142	0	3,916,839	0	3,937,460
21	144,854,493	15,899,819	15,899,819	0	3,656,359	0	3,676,574
22	154,629,158	16,026,278	16,026,278	0	3,436,308	0	3,456,213
23	151,689,513	16,218,522	16,218,522	0	3,242,450	0	3,262,089
24	147,976,722	16,300,624	16,300,624	0	3,038,568	0	3,057,775
25	143,805,238	16,311,750	16,311,750	0	2,835,098	0	2,853,768

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	\$139,253,248	\$16,220,523	\$16,220,523	\$0	\$2,628,664	\$0	\$2,646,669
27	134,394,769	16,021,127	16,021,127	0	2,420,839	0	2,438,061
28	129,378,399	15,770,902	15,770,902	0	2,221,939	0	2,238,333
29	124,241,964	15,467,392	15,467,392	0	2,031,867	0	2,047,397
30	119,056,942	15,137,745	15,137,745	0	1,854,138	0	1,868,800
31	113,846,019	14,767,813	14,767,813	0	1,686,552	0	1,700,335
32	108,662,992	14,384,414	14,384,414	0	1,531,717	0	1,544,640
33	103,528,179	14,001,904	14,001,904	0	1,390,196	0	1,402,293
34	98,443,760	13,620,157	13,620,157	0	1,260,880	0	1,272,186
35	93,413,450	13,238,937	13,238,937	0	1,142,740	0	1,153,290
36	88,442,100	12,857,154	12,857,154	0	1,034,766	0	1,044,592
37	83,536,552	12,474,289	12,474,289	0	936,086	0	945,223
38	78,704,896	12,089,572	12,089,572	0	845,889	0	854,371
39	73,956,722	11,702,328	11,702,328	0	763,445	0	771,302
40	69,302,804	11,311,930	11,311,930	0	688,089	0	695,353
41	64,754,871	10,917,859	10,917,859	0	619,225	0	625,926
42	60,325,211	10,519,732	10,519,732	0	556,312	0	562,480
43	56,026,289	10,117,281	10,117,281	0	498,861	0	504,525
44	51,870,393	9,710,566	9,710,566	0	446,440	0	451,627
45	47,868,941	9,300,084	9,300,084	0	398,665	0	403,403
46	44,031,985	8,886,618	8,886,618	0	355,190	0	359,506
47	40,367,983	8,471,182	8,471,182	0	315,697	0	319,617
48	36,883,580	8,055,010	8,055,010	0	279,895	0	283,445
49	33,583,539	7,639,543	7,639,543	0	247,514	0	250,719
50	30,470,610	7,226,456	7,226,456	0	218,303	0	221,188

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)
51	\$27,545,534	\$6,817,585	\$6,817,585	\$0	\$192,030	\$0	\$194,618
52	25,557,715	6,414,851	6,414,851	0	168,472	0	170,788
53	22,978,279	6,020,033	6,020,033	0	147,415	0	149,481
54	20,562,500	5,634,803	5,634,803	0	128,654	0	130,491
55	18,318,540	5,260,755	5,260,755	0	111,994	0	113,623
56	16,240,224	4,899,225	4,899,225	0	97,248	0	98,688
57	14,320,464	4,551,234	4,551,234	0	84,233	0	85,503
58	12,551,827	4,217,461	4,217,461	0	72,779	0	73,896
59	10,926,906	3,898,333	3,898,333	0	62,725	0	63,704
60	9,438,521	3,594,069	3,594,069	0	53,920	0	54,776
61	8,079,971	3,304,817	3,304,817	0	46,229	0	46,975
62	6,845,087	3,030,520	3,030,520	0	39,526	0	40,175
63	5,728,486	2,771,034	2,771,034	0	33,699	0	34,261
64	4,725,415	2,526,061	2,526,061	0	28,643	0	29,128
65	3,831,669	2,295,156	2,295,156	0	24,265	0	24,683
66	3,043,384	2,077,683	2,077,683	0	20,481	0	20,839
67	2,356,803	1,872,890	1,872,890	0	17,214	0	17,520
68	1,767,847	1,680,141	1,680,141	0	14,399	0	14,658
69	1,271,654	1,498,748	1,271,654	227,094	10,161	31,169	12,195
70	862,632	1,328,038	862,632	465,406	6,427	62,065	10,078
71	534,312	1,167,531	534,312	633,219	3,712	82,048	8,263
72	279,267	1,017,072	279,267	737,805	1,809	92,888	6,714
73	89,182	876,842	89,182	787,660	539	96,351	5,398
74	0	747,134	0	747,134	0	88,800	4,290
75	0	628,416	0	628,416	0	72,571	3,365

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	\$0	\$520,996	\$0	\$520,996	\$0	\$58,459	\$2,602
77	0	425,374	0	425,374	0	46,375	1,981
78	0	341,672	0	341,672	0	36,193	1,484
79	0	269,719	0	269,719	0	27,761	1,093
80	0	209,006	0	209,006	0	20,901	790
81	0	158,936	0	158,936	0	15,443	560
82	0	118,466	0	118,466	0	11,184	389
83	0	86,554	0	86,554	0	7,940	265
84	0	61,943	0	61,943	0	5,521	177
85	0	43,394	0	43,394	0	3,758	116
86	0	29,775	0	29,775	0	2,505	74
87	0	19,972	0	19,972	0	1,633	46
88	0	13,131	0	13,131	0	1,043	28
89	0	8,361	0	8,361	0	645	17
90	0	5,203	0	5,203	0	390	10
91	0	3,168	0	3,168	0	231	6
92	0	1,852	0	1,852	0	131	3
93	0	998	0	998	0	69	2
94	0	506	0	506	0	34	1
95	0	292	0	292	0	19	0
96	0	161	0	161	0	10	0
97	0	85	0	85	0	5	0
98	0	44	0	44	0	3	0
99	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
					<u>\$213,142,254</u>	<u>\$766,145</u>	<u>\$213,908,399</u>

* From Table 2.

**7.25% was the assumed rate of return used to project the plan's fiduciary net position and is the discount rate used for column (f).

***2.92% S&P Municipal Bond 20 Year High Grade Index as of June 29, 2018 (YTW).

****7.22% 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).