

***City of Grosse Pointe Woods  
Retiree Health Plan***

*Actuarial Information for GASB Statement 74*

*June 30, 2017*

December 1, 2017

Retiree Health Plan  
Grosse Pointe Woods, Michigan

Dear Board Members:

This document contains actuarial information required for Plan reporting purposes pursuant to Governmental Accounting Standards Board Statement No. 74 effective for the Fiscal Year ended June 30, 2017.

Respectfully submitted,



Denise M. Jones  
Senior Consultant



Sandra W. Rodwan  
Member, American Academy of Actuaries

**Net OPEB Liability**

The components of the net OPEB liability at June 30, 2017 were as follows:

Total OPEB liability	\$62,894,718
Plan fiduciary net position	582,594
Plan's net OPEB liability	\$62,312,124
Plan fiduciary net position as a percentage of the total OPEB liability	0.93%

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

Actuarial Cost Method	Entry Age
Inflation	6% for the year of valuation, graded down to 5% in 0.15 increments
Salary Increases	N/A
Mortality	RP 2014 Healthy Annuitant Mortality Table

**Discount rate.** The discount rate used to measure the total OPEB liability was 3.13%. The projection of cash flows used to determine the discount rate assumed that Plan contributions will be made rates equal to the benefit payout. Based on these assumptions, the 3.13% 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 74.

**Sensitivity of the Discount Rate**

	<b>1% Decrease 2.13%</b>	<b>GASB 74 Discount Rate 3.13%</b>	<b>1% Increase 4.13%</b>
<b>Plan's Net OPEB Liability</b>	\$75,407,340	\$62,312,124	\$51,457,694

**Medical Inflation Rate.** The medical inflation rate used to measure the total OPEB liability was 6.0% the first year, decreasing in 0.1% increments over the following 10 years to an ultimate assumed rate of 5.0%.

**Sensitivity of Medical Inflation Rate**

	<b>1% Decrease 5.00%-4.00%</b>	<b>GASB 74 Med. Inflation Rate 6.00%-5.00%</b>	<b>1% Increase 7.00%-6.00%</b>
<b>Plan's Net OPEB Liability</b>	\$51,218,457	\$62,312,124	\$77,050,787

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

**Year Ended**

**6/30/2017**

Total OPEB liability	
Service cost	\$2,170,530
Interest	1,848,285
Changes in benefit terms	-
Differences between expected and actual experience	(2,581,257)
Changes of assumptions	
Interest assumptions	(5,709,893)
Mortality assumptions	
Total due to assumption changes	(5,709,893)
Benefit payments, including refunds of member contributions	(1,422,713)
Net change in total OPEB liability	(\$5,695,105)
Total OPEB liability-beginning	68,589,823
Total OPEB liability-ending (a)	62,894,718
Plan fiduciary net position	
Contributions-employer	1,472,713
Contributions-member	64,057
Net investment income	4,215
Benefit payments, including refunds of member contributions	(1,422,713)
Administrative Expense	39
Other	-
Net change in plan fiduciary net position	118,233
Plan fiduciary net position-beginning	464,361
Plan fiduciary net position-ending (b)	582,594
City's net OPEB liability-ending (a)-(b)	\$62,312,124
Plan fiduciary net position as a percentage of the total OPEB liability	0.93%

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

**2017**

Actuarially determined contribution	\$3,083,916
Plan Contributions	<u>1,472,713</u>
Contribution excess (deficiency)	<u><u>(1,611,203)</u></u>
 Covered employee payroll	 \$4,493,845
 Actual Contributions as a percentage of covered payroll	 32.77%

**Notes to Schedule**

Valuation date: June 30, 2016  
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, open
Remaining amortization period	30 years
Asset valuation method	Market
Pre-retirement Medical Inflation	6% for the year of valuation, graded down to 5% in 0.1% increments
Salary increases	N/A
Investment rate of return	3.5%, net of plan investment expense
Mortality Table	RP 2014

**Table 1**  
**Projection of Total Contributions\***  
**Assuming 30 Year Open Amortization of UAAL**

<b>Year Beg. 7/1</b>	<b>Projected Entry Age AAL</b>	<b>Projected Funding Value of Assets</b>	<b>UAAL</b>	<b>30 Year Open Amortization</b>	<b>Projected Employer Normal Cost</b>	<b>Employer Contribution</b>	<b>Employee Contribution</b>	<b>Total Contributions</b>
2017	\$58,694,145	\$582,594	\$58,111,551	\$3,105,567	\$1,707,867	\$1,411,818	\$0	\$1,411,818
2018	61,044,551	600,790	60,443,761	3,230,203	1,683,950	1,484,443	0	1,484,443
2019	63,380,621	619,553	62,761,068	3,354,044	1,664,767	1,561,436	0	1,561,436
2020	65,702,266	638,901	65,063,365	3,477,082	1,619,077	1,669,555	0	1,669,555
2021	67,951,372	658,852	67,292,520	3,596,211	1,585,567	1,760,160	0	1,760,160
2022	70,155,066	679,424	69,475,642	3,712,880	1,564,461	1,858,323	0	1,858,323
2023	72,316,640	700,638	71,616,002	3,827,264	1,552,951	1,948,308	0	1,948,308
2024	74,452,370	722,513	73,729,857	3,940,232	1,501,938	2,064,195	0	2,064,195
2025	76,495,959	745,070	75,750,889	4,048,239	1,463,746	2,183,585	0	2,183,585
2026	78,453,475	768,330	77,685,145	4,151,608	1,415,534	2,307,599	0	2,307,599
2027	80,307,281	792,314	79,514,967	4,249,397	1,320,989	2,477,373	0	2,477,373
2028	81,961,649	817,044	81,144,605	4,336,487	1,216,206	2,639,158	0	2,639,158
2029	83,407,360	842,543	82,564,817	4,412,385	1,130,657	2,784,493	0	2,784,493
2030	84,672,785	868,836	83,803,949	4,478,606	1,059,334	2,921,416	0	2,921,416
2031	85,774,247	895,948	84,878,299	4,536,021	941,675	3,102,111	0	3,102,111
2032	86,615,909	923,904	85,692,005	4,579,507	816,268	3,275,605	0	3,275,605
2033	87,188,128	952,731	86,235,397	4,608,546	704,043	3,429,062	0	3,429,062
2034	87,514,690	982,455	86,532,235	4,624,410	628,245	3,574,492	0	3,574,492
2035	87,631,455	1,013,105	86,618,350	4,629,012	534,238	3,729,976	0	3,729,976
2036	87,502,820	1,044,711	86,458,109	4,620,448	451,714	3,841,841	0	3,841,841
2037	87,175,296	1,077,303	86,097,993	4,601,203	395,712	3,945,745	0	3,945,745
2038	86,676,391	1,110,912	85,565,479	4,572,745	348,208	4,042,013	0	4,042,013
2039	86,016,270	1,145,570	84,870,700	4,535,615	308,446	4,151,965	0	4,151,965
2040	85,183,323	1,181,310	84,002,013	4,489,191	266,594	4,225,223	0	4,225,223
2041	84,206,107	1,218,166	82,987,941	4,434,997	221,423	4,270,546	0	4,270,546

**Table 1 (Continued)**  
**Projection of Total Contributions\***  
**Assuming 30 Year Open Amortization of UAAL**

<b>Year Beg. 7/1</b>	<b>Projected Entry Age AAL</b>	<b>Projected Funding Value of Assets</b>	<b>UAAL</b>	<b>30 Year Open Amortization</b>	<b>Projected Employer Normal Cost</b>	<b>Employer Contribution</b>	<b>Employee Contribution</b>	<b>Total Contributions</b>
2042	\$83,104,198	\$1,256,175	\$81,848,023	\$4,374,079	\$159,952	\$4,366,053	\$0	\$4,366,053
2043	81,806,742	1,295,370	80,511,372	4,302,646	114,064	4,444,678	0	4,444,678
2044	80,339,364	1,335,790	79,003,574	4,222,067	85,433	4,479,108	0	4,479,108
2045	78,757,575	1,377,474	77,380,101	4,135,306	61,266	4,496,580	0	4,496,580
2046	77,078,772	1,420,463	75,658,309	4,043,291	45,060	4,515,440	0	4,515,440
2047	75,306,144	1,464,797	73,841,347	3,946,190	31,960	4,523,726	0	4,523,726
2048	73,450,098	1,510,518	71,939,580	3,844,557	22,837	4,561,725	0	4,561,725
2049	71,481,960	1,557,669	69,924,291	3,736,857	17,796	4,545,792	0	4,545,792
2050	69,455,832	1,606,296	67,849,536	3,625,979	12,569	4,562,290	0	4,562,290
2051	67,337,058	1,656,445	65,680,613	3,510,068	8,836	4,577,716	0	4,577,716
2052	65,124,972	1,708,164	63,416,808	3,389,087	7,037	4,563,873	0	4,563,873
2053	62,847,509	1,761,502	61,086,007	3,264,526	4,245	4,551,510	0	4,551,510
2054	60,499,905	1,816,509	58,683,396	3,136,127	2,663	4,542,700	0	4,542,700
2055	58,077,357	1,873,239	56,204,118	3,003,631	1,927	4,510,891	0	4,510,891
2056	55,601,102	1,931,744	53,669,358	2,868,169	1,056	4,465,047	0	4,465,047
2057	53,083,148	1,992,083	51,091,065	2,730,382	444	4,426,471	0	4,426,471
2058	50,515,029	2,054,311	48,460,718	2,589,812	226	4,376,779	0	4,376,779
2059	47,906,501	2,118,488	45,788,013	2,446,979	123	4,315,455	0	4,315,455
2060	45,267,893	2,184,676	43,083,217	2,302,430	29	4,241,961	0	4,241,961
2061	42,610,343	2,252,938	40,357,405	2,156,759	0	4,155,766	0	4,155,766
2062	39,945,940	2,323,338	37,622,602	2,010,607	0	4,056,577	0	4,056,577
2063	37,287,473	2,395,945	34,891,528	1,864,654	0	3,944,328	0	3,944,328
2064	34,648,204	2,470,827	32,177,377	1,719,606	0	3,819,183	0	3,819,183
2065	32,041,706	2,548,056	29,493,650	1,576,184	0	3,681,502	0	3,681,502
2066	29,481,670	2,627,707	26,853,963	1,435,115	0	3,531,850	0	3,531,850



**Table 1 (Continued)**  
**Projection of Total Contributions\***  
**Assuming 30 Year Open Amortization of UAAL**

Year Beg. 7/1	Projected Entry Age AAL	Projected Funding Value of Assets	UAAL	30 Year Open Amortization	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions
2067	\$26,981,682	\$2,709,855	\$24,271,827	\$1,297,122	\$0	\$3,371,071	\$0	\$3,371,071
2068	24,554,970	2,794,579	21,760,391	1,162,907	0	3,200,258	0	3,200,258
2069	22,214,139	2,881,960	19,332,179	1,033,140	0	3,020,689	0	3,020,689
2070	19,970,945	2,972,081	16,998,864	908,444	0	2,833,796	0	2,833,796
2071	17,836,138	3,065,028	14,771,110	789,390	0	2,641,212	0	2,641,212
2072	15,819,191	3,160,889	12,658,302	676,478	0	2,444,730	0	2,444,730
2073	13,928,126	3,259,756	10,668,370	570,133	0	2,246,289	0	2,246,289
2074	12,169,320	3,361,723	8,807,597	470,691	0	2,047,940	0	2,047,940
2075	10,547,302	3,466,887	7,080,415	378,388	0	1,851,788	0	1,851,788
2076	9,064,674	3,575,349	5,489,325	293,358	0	1,659,958	0	1,659,958
2077	7,721,978	3,687,211	4,034,767	215,624	0	1,474,499	0	1,474,499
2078	6,517,749	3,802,579	2,715,170	145,103	0	1,297,283	0	1,297,283
2079	5,448,579	3,921,563	1,527,016	81,606	0	1,130,012	0	1,130,012
2080	4,509,271	4,044,276	464,995	24,850	0	615,700	0	615,700
2081	3,693,042	3,806,874	(113,832)	0	0	0	0	0
2082	2,991,791	3,082,502	(90,711)	0	0	0	0	0
2083	2,396,407	2,467,910	(71,503)	0	0	0	0	0
2084	1,897,040	1,952,770	(55,730)	0	0	0	0	0
2085	1,483,463	1,526,390	(42,927)	0	0	0	0	0
2086	1,145,367	1,178,031	(32,664)	0	0	0	0	0
2087	872,675	897,214	(24,539)	0	0	0	0	0
2088	655,760	673,961	(18,201)	0	0	0	0	0
2089	485,683	499,000	(13,317)	0	0	0	0	0
2090	354,299	363,915	(9,616)	0	0	0	0	0
2091	254,385	261,227	(6,842)	0	0	0	0	0

**Table 1 (Continued)**  
**Projection of Total Contributions\***  
**Assuming 30 Year Open Amortization of UAAL**

<b>Year Beg. 7/1</b>	<b>Projected Entry Age AAL</b>	<b>Projected Funding Value of Assets</b>	<b>UAAL</b>	<b>30 Year Open Amortization</b>	<b>Projected Employer Normal Cost</b>	<b>Employer Contribution</b>	<b>Employee Contribution</b>	<b>Total Contributions</b>
2092	\$179,616	\$184,425	\$(4,809)	\$0	\$0	\$0	\$0	\$0
2093	124,608	127,946	(3,338)	0	0	0	0	0
2094	84,857	87,143	(2,286)	0	0	0	0	0
2095	56,665	58,219	(1,554)	0	0	0	0	0
2096	37,075	38,128	(1,053)	0	0	0	0	0
2097	23,739	24,454	(715)	0	0	0	0	0
2098	14,856	15,355	(499)	0	0	0	0	0
2099	9,080	9,442	(362)	0	0	0	0	0
2100	5,417	5,693	(276)	0	0	0	0	0
2101	3,152	3,379	(227)	0	0	0	0	0
2102	1,788	1,987	(199)	0	0	0	0	0
2103	982	1,168	(186)	0	0	0	0	0
2104	528	707	(179)	0	0	0	0	0
2105	273	452	(179)	0	0	0	0	0
2106	133	314	(181)	0	0	0	0	0
2107	61	247	(186)	0	0	0	0	0
2108	26	217	(191)	0	0	0	0	0
2109	7	203	(196)	0	0	0	0	0
2110	0	202	(202)	0	0	0	0	0
2111	0	208	(208)	0	0	0	0	0
2112	0	215	(215)	0	0	0	0	0
2113	0	222	(222)	0	0	0	0	0
2114	0	229	(229)	0	0	0	0	0
2115	0	236	(236)	0	0	0	0	0
2116	0	243	(243)	0	0	0	0	0

\*The Projection of Contributions uses the plan's actuarial valuation interest and mortality assumptions. Contributions are assumed to equal the benefit payout.

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

<b>Year Beg. 7/1</b>	<b>Projected Beginning Fiduciary Net Position (a)</b>	<b>Projected Total Contributions* (b)</b>	<b>Projected Benefit Payments** (c)</b>	<b>Projected Administrative Expense*** (d)</b>	<b>Projected Investment Earnings**** (e)</b>	<b>Projected Fiduciary Ending Net Position (a)+(b)+(c)+(d)+(e)</b>
2017	\$582,594	\$1,411,818	\$(1,411,818)	\$(39)	\$18,235	\$600,790
2018	600,790	1,484,443	(1,484,443)	(41)	18,804	619,553
2019	619,553	1,561,436	(1,561,436)	(43)	19,391	638,901
2020	638,901	1,669,555	(1,669,555)	(46)	19,997	658,852
2021	658,852	1,760,160	(1,760,160)	(49)	20,621	679,424
2022	679,424	1,858,323	(1,858,323)	(51)	21,265	700,638
2023	700,638	1,948,308	(1,948,308)	(54)	21,929	722,513
2024	722,513	2,064,195	(2,064,195)	(57)	22,614	745,070
2025	745,070	2,183,585	(2,183,585)	(60)	23,320	768,330
2026	768,330	2,307,599	(2,307,599)	(64)	24,048	792,314
2027	792,314	2,477,373	(2,477,373)	(68)	24,798	817,044
2028	817,044	2,639,158	(2,639,158)	(73)	25,572	842,543
2029	842,543	2,784,493	(2,784,493)	(77)	26,370	868,836
2030	868,836	2,921,416	(2,921,416)	(81)	27,193	895,948
2031	895,948	3,102,111	(3,102,111)	(86)	28,042	923,904
2032	923,904	3,275,605	(3,275,605)	(90)	28,917	952,731
2033	952,731	3,429,062	(3,429,062)	(95)	29,819	982,455
2034	982,455	3,574,492	(3,574,492)	(99)	30,749	1,013,105
2035	1,013,105	3,729,976	(3,729,976)	(103)	31,709	1,044,711
2036	1,044,711	3,841,841	(3,841,841)	(106)	32,698	1,077,303
2037	1,077,303	3,945,745	(3,945,745)	(109)	33,718	1,110,912
2038	1,110,912	4,042,013	(4,042,013)	(112)	34,770	1,145,570
2039	1,145,570	4,151,965	(4,151,965)	(115)	35,855	1,181,310
2040	1,181,310	4,225,223	(4,225,223)	(117)	36,973	1,218,166
2041	1,218,166	4,270,546	(4,270,546)	(118)	38,127	1,256,175

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)
2042	\$1,256,175	\$4,366,053	\$(4,366,053)	\$(121)	\$39,316	\$1,295,370
2043	1,295,370	4,444,678	(4,444,678)	(123)	40,543	1,335,790
2044	1,335,790	4,479,108	(4,479,108)	(124)	41,808	1,377,474
2045	1,377,474	4,496,580	(4,496,580)	(124)	43,113	1,420,463
2046	1,420,463	4,515,440	(4,515,440)	(125)	44,459	1,464,797
2047	1,464,797	4,523,726	(4,523,726)	(125)	45,846	1,510,518
2048	1,510,518	4,561,725	(4,561,725)	(126)	47,277	1,557,669
2049	1,557,669	4,545,792	(4,545,792)	(126)	48,753	1,606,296
2050	1,606,296	4,562,290	(4,562,290)	(126)	50,275	1,656,445
2051	1,656,445	4,577,716	(4,577,716)	(126)	51,845	1,708,164
2052	1,708,164	4,563,873	(4,563,873)	(126)	53,464	1,761,502
2053	1,761,502	4,551,510	(4,551,510)	(126)	55,133	1,816,509
2054	1,816,509	4,542,700	(4,542,700)	(125)	56,855	1,873,239
2055	1,873,239	4,510,891	(4,510,891)	(125)	58,630	1,931,744
2056	1,931,744	4,465,047	(4,465,047)	(123)	60,462	1,992,083
2057	1,992,083	4,426,471	(4,426,471)	(122)	62,350	2,054,311
2058	2,054,311	4,376,779	(4,376,779)	(121)	64,298	2,118,488
2059	2,118,488	4,315,455	(4,315,455)	(119)	66,307	2,184,676
2060	2,184,676	4,241,961	(4,241,961)	(117)	68,379	2,252,938
2061	2,252,938	4,155,766	(4,155,766)	(115)	70,515	2,323,338
2062	2,323,338	4,056,577	(4,056,577)	(112)	72,719	2,395,945
2063	2,395,945	3,944,328	(3,944,328)	(109)	74,991	2,470,827
2064	2,470,827	3,819,183	(3,819,183)	(106)	77,335	2,548,056
2065	2,548,056	3,681,502	(3,681,502)	(102)	79,753	2,627,707
2066	2,627,707	3,531,850	(3,531,850)	(98)	82,246	2,709,855

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)
2067	\$2,709,855	\$3,371,071	\$(3,371,071)	\$(93)	\$84,817	\$2,794,579
2068	2,794,579	3,200,258	(3,200,258)	(88)	87,469	2,881,960
2069	2,881,960	3,020,689	(3,020,689)	(83)	90,204	2,972,081
2070	2,972,081	2,833,796	(2,833,796)	(78)	93,025	3,065,028
2071	3,065,028	2,641,212	(2,641,212)	(73)	95,934	3,160,889
2072	3,160,889	2,444,730	(2,444,730)	(68)	98,935	3,259,756
2073	3,259,756	2,246,289	(2,246,289)	(62)	102,029	3,361,723
2074	3,361,723	2,047,940	(2,047,940)	(57)	105,221	3,466,887
2075	3,466,887	1,851,788	(1,851,788)	(51)	108,513	3,575,349
2076	3,575,349	1,659,958	(1,659,958)	(46)	111,908	3,687,211
2077	3,687,211	1,474,499	(1,474,499)	(41)	115,409	3,802,579
2078	3,802,579	1,297,283	(1,297,283)	(36)	119,020	3,921,563
2079	3,921,563	1,130,012	(1,130,012)	(31)	122,744	4,044,276
2080	4,044,276	615,700	(974,052)	(27)	120,977	3,806,874
2081	3,806,874	0	(830,506)	(23)	106,157	3,082,502
2082	3,082,502	0	(700,098)	(19)	85,525	2,467,910
2083	2,467,910	0	(583,242)	(16)	68,118	1,952,770
2084	1,952,770	0	(479,977)	(13)	53,610	1,526,390
2085	1,526,390	0	(390,020)	(11)	41,672	1,178,031
2086	1,178,031	0	(312,785)	(9)	31,977	897,214
2087	897,214	0	(247,456)	(7)	24,210	673,961
2088	673,961	0	(193,030)	(5)	18,074	499,000
2089	499,000	0	(148,378)	(4)	13,297	363,915
2090	363,915	0	(112,318)	(3)	9,633	261,227
2091	261,227	0	(83,667)	(2)	6,867	184,425

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)
2092	\$184,425	\$0	\$(61,290)	\$(2)	\$4,813	\$127,946
2093	127,946	0	(44,116)	(1)	3,314	87,143
2094	87,143	0	(31,163)	(1)	2,240	58,219
2095	58,219	0	(21,575)	(1)	1,485	38,128
2096	38,128	0	(14,638)	0	964	24,454
2097	24,454	0	(9,712)	0	613	15,355
2098	15,355	0	(6,295)	0	382	9,442
2099	9,442	0	(3,982)	0	233	5,693
2100	5,693	0	(2,454)	0	140	3,379
2101	3,379	0	(1,475)	0	83	1,987
2102	1,987	0	(868)	0	49	1,168
2103	1,168	0	(490)	0	29	707
2104	707	0	(273)	0	18	452
2105	452	0	(150)	0	12	314
2106	314	0	(76)	0	9	247
2107	247	0	(37)	0	7	217
2108	217	0	(20)	0	6	203
2109	203	0	(7)	0	6	202
2110	202	0	0	0	6	208
2111	208	0	0	0	7	215
2112	215	0	0	0	7	222
2113	222	0	0	0	7	229
2114	229	0	0	0	7	236
2115	236	0	0	0	7	243
2116	243	0	0	0	8	251

\*From Table 1.

\*\*Assumed Mortality for Benefit Payout Projection was based on the RP 2014 Mortality Table.

\*\*\*Administrative expense was assumed to be 0.00% of pension payroll.

\*\*\*\*Assumed rate or return used to project the Fiduciary Net Position was 3.13%.

**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	\$582,594	\$1,411,818	\$582,594	\$829,224	\$564,912	\$804,057	\$1,368,969
2	600,790	1,484,443	600,790	883,653	564,875	830,829	1,395,705
3	619,553	1,561,436	619,553	941,883	564,837	858,701	1,423,538
4	638,901	1,669,555	638,901	1,030,654	564,798	911,114	1,475,913
5	658,852	1,760,160	658,852	1,101,308	564,759	944,025	1,508,784
6	679,424	1,858,323	679,424	1,178,899	564,717	979,866	1,544,582
7	700,638	1,948,308	700,638	1,247,670	564,675	1,005,552	1,570,227
8	722,513	2,064,195	722,513	1,341,682	564,632	1,048,502	1,613,135
9	745,070	2,183,585	745,070	1,438,515	564,588	1,090,057	1,654,645
10	768,330	2,307,599	768,330	1,539,269	564,544	1,131,005	1,695,548
11	792,314	2,477,373	792,314	1,685,059	564,498	1,200,549	1,765,047
12	817,044	2,639,158	817,044	1,822,114	564,450	1,258,796	1,823,246
13	842,543	2,784,493	842,543	1,941,950	564,400	1,300,867	1,865,267
14	868,836	2,921,416	868,836	2,052,580	564,349	1,333,245	1,897,593
15	895,948	3,102,111	895,948	2,206,163	564,297	1,389,512	1,953,809
16	923,904	3,275,605	923,904	2,351,701	564,243	1,436,223	2,000,466
17	952,731	3,429,062	952,731	2,476,331	564,189	1,466,437	2,030,626
18	982,455	3,574,492	982,455	2,592,037	564,134	1,488,370	2,052,504
19	1,013,105	3,729,976	1,013,105	2,716,871	564,078	1,512,703	2,076,781
20	1,044,711	3,841,841	1,044,711	2,797,130	564,022	1,510,123	2,074,145
21	1,077,303	3,945,745	1,077,303	2,868,442	563,965	1,501,622	2,065,588
22	1,110,912	4,042,013	1,110,912	2,931,101	563,909	1,487,854	2,051,764
23	1,145,570	4,151,965	1,145,570	3,006,395	563,853	1,479,758	2,043,611
24	1,181,310	4,225,223	1,181,310	3,043,913	563,798	1,452,753	2,016,551
25	1,218,166	4,270,546	1,218,166	3,052,380	563,743	1,412,580	1,976,323

**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	\$1,256,175	\$4,366,053	\$1,256,175	\$3,109,878	\$563,689	\$1,395,510	\$1,959,199
27	1,295,370	4,444,678	1,295,370	3,149,308	563,636	1,370,313	1,933,948
28	1,335,790	4,479,108	1,335,790	3,143,318	563,583	1,326,196	1,889,779
29	1,377,474	4,496,580	1,377,474	3,119,106	563,531	1,276,041	1,839,572
30	1,420,463	4,515,440	1,420,463	3,094,977	563,481	1,227,741	1,791,223
31	1,464,797	4,523,726	1,464,797	3,058,929	563,432	1,176,614	1,740,046
32	1,510,518	4,561,725	1,510,518	3,051,207	563,385	1,138,023	1,701,408
33	1,557,669	4,545,792	1,557,669	2,988,123	563,339	1,080,669	1,644,008
34	1,606,296	4,562,290	1,606,296	2,955,994	563,294	1,036,604	1,599,898
35	1,656,445	4,577,716	1,656,445	2,921,271	563,250	993,336	1,556,586
36	1,708,164	4,563,873	1,708,164	2,855,709	563,208	941,572	1,504,780
37	1,761,502	4,551,510	1,761,502	2,790,008	563,167	891,990	1,455,157
38	1,816,509	4,542,700	1,816,509	2,726,191	563,128	845,134	1,408,262
39	1,873,239	4,510,891	1,873,239	2,637,652	563,090	792,870	1,355,959
40	1,931,744	4,465,047	1,931,744	2,533,303	563,052	738,391	1,301,444
41	1,992,083	4,426,471	1,992,083	2,434,388	563,017	688,025	1,251,042
42	2,054,311	4,376,779	2,054,311	2,322,468	562,983	636,472	1,199,455
43	2,118,488	4,315,455	2,118,488	2,196,967	562,951	583,805	1,146,756
44	2,184,676	4,241,961	2,184,676	2,057,285	562,919	530,095	1,093,014
45	2,252,938	4,155,766	2,252,938	1,902,828	562,890	475,416	1,038,306
46	2,323,338	4,056,577	2,323,338	1,733,239	562,862	419,902	982,763
47	2,395,945	3,944,328	2,395,945	1,548,383	562,835	363,733	926,568
48	2,470,827	3,819,183	2,470,827	1,348,356	562,810	307,131	869,941
49	2,548,056	3,681,502	2,548,056	1,133,446	562,786	250,343	813,128
50	2,627,707	3,531,850	2,627,707	904,143	562,764	193,636	756,400



**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	\$2,709,855	\$3,371,071	\$2,709,855	\$661,216	\$562,743	\$137,312	\$700,055
52	2,794,579	3,200,258	2,794,579	405,679	562,724	81,689	644,413
53	2,881,960	3,020,689	2,881,960	138,729	562,707	27,087	589,794
54	2,972,081	2,833,796	2,833,796	0	536,510	0	536,510
55	3,065,028	2,641,212	2,641,212	0	484,872	0	484,872
56	3,160,889	2,444,730	2,444,730	0	435,181	0	435,181
57	3,259,756	2,246,289	2,246,289	0	387,721	0	387,721
58	3,361,723	2,047,940	2,047,940	0	342,757	0	342,757
59	3,466,887	1,851,788	1,851,788	0	300,521	0	300,521
60	3,575,349	1,659,958	1,659,958	0	261,214	0	261,214
61	3,687,211	1,474,499	1,474,499	0	224,988	0	224,988
62	3,802,579	1,297,283	1,297,283	0	191,939	0	191,939
63	3,921,563	1,130,012	1,130,012	0	162,116	0	162,116
64	4,044,276	974,052	974,052	0	135,501	0	135,501
65	3,806,874	830,506	830,506	0	112,025	0	112,025
66	3,082,502	700,098	700,098	0	91,569	0	91,569
67	2,467,910	583,242	583,242	0	73,969	0	73,969
68	1,952,770	479,977	479,977	0	59,025	0	59,025
69	1,526,390	390,020	390,020	0	46,507	0	46,507
70	1,178,031	312,785	312,785	0	36,166	0	36,166
71	897,214	247,456	247,456	0	27,744	0	27,744
72	673,961	193,030	193,030	0	20,985	0	20,985
73	499,000	148,378	148,378	0	15,641	0	15,641
74	363,915	112,318	112,318	0	11,480	0	11,480
75	261,227	83,667	83,667	0	8,292	0	8,292

**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	\$184,425	\$61,290	\$61,290	\$0	\$5,890	\$0	\$5,890
77	127,946	44,116	44,116	0	4,111	0	4,111
78	87,143	31,163	31,163	0	2,816	0	2,816
79	58,219	21,575	21,575	0	1,890	0	1,890
80	38,128	14,638	14,638	0	1,244	0	1,244
81	24,454	9,712	9,712	0	800	0	800
82	15,355	6,295	6,295	0	503	0	503
83	9,442	3,982	3,982	0	308	0	308
84	5,693	2,454	2,454	0	184	0	184
85	3,379	1,475	1,475	0	107	0	107
86	1,987	868	868	0	61	0	61
87	1,168	490	490	0	34	0	34
88	707	273	273	0	18	0	18
89	452	150	150	0	10	0	10
90	314	76	76	0	5	0	5
91	247	37	37	0	2	0	2
92	217	20	20	0	1	0	1
93	203	7	7	0	0	0	0
94	202	0	0	0	0	0	0
95	208	0	0	0	0	0	0
96	215	0	0	0	0	0	0
97	222	0	0	0	0	0	0
98	229	0	0	0	0	0	0
99	236	0	0	0	0	0	0
100	243	0	0	0	0	0	0
					\$33,861,228	\$51,760,750	\$85,621,978

\* From Table 2.

\*\*3.13% 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% S & P Municipal Bond 20 Year High Grade Index as of June 30, 2017 (YTW).

\*\*\*\*3.13% 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).

