

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

Revised Actuarial Information for GASB Statements 74/75

June 30, 2018

November 21, 2018

Retiree Health Plan
Grosse Pointe Woods, Michigan

Dear Board Members:

This revised document contains actuarial information required for Plan reporting purposes pursuant to Governmental Accounting Standards Board Statements No. 74/75 effective for the Fiscal Year ended June 30, 2018.

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, 2018 were as follows:

Total OPEB liability	\$36,208,030
Plan fiduciary net position	701,126
Plan’s net OPEB liability	\$35,506,904
Plan fiduciary net position as a percentage of the total OPEB liability	1.94%

Actuarial assumptions. The total OPEB liability was determined based on the annual actuarial valuation as of June 30, 2018. 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 with MP 2017

Discount rate. The discount rate used to measure the total OPEB liability was 6.80%, which is the assumed long-term rate for the plan.

Sensitivity of the Discount Rate

	1% Decrease 5.80%	GASB 74 Discount Rate 6.80%	1% Increase 7.80%
Plan's Net OPEB Liability	\$41,631,837	\$35,506,904	\$30,668,156

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

	1% Decrease 5.00%-4.00%	GASB 74 Med. Inflation Rate 6.00%-5.00%	1% Increase 7.00%-6.00%
Plan's Net OPEB Liability	\$30,515,133	\$35,506,904	\$41,855,338

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

	Year Ended <u>6/30/2018</u>
Total OPEB liability	
Service cost	\$1,861,554
Interest	1,973,036
Changes in benefit terms	-
Differences between expected and actual experience	(3,809,187)
Changes of assumptions	
Interest Assumption	(32,906,086)
Mortality Assumption	7,772,406
Total Assumptions	(25,133,680)
Benefit payments, including refunds of member contributions	(1,578,411)
Net change in total OPEB liability	\$(26,686,688)
Total OPEB liability-beginning	62,894,718
Total OPEB liability-ending (a)	36,208,030
Plan fiduciary net position	
Contributions-employer	1,628,411
Contributions-member	63,942
Net investment income	4,590
Benefit payments, including refunds of member contributions	(1,578,411)
Administrative Expense	-
Other	-
Net change in plan fiduciary net position	118,532
Plan fiduciary net position-beginning	582,594
Plan fiduciary net position-ending (b)	701,126
Plan's net OPEB liability-ending (a)-(b)	\$35,506,904
Plan fiduciary net position as a percentage of the total OPEB liability	1.94%

Additional Required Disclosures

Total expected remaining service lives	<u>06/30/2018</u>
Active Participants	425.8
Inactive Participants*	0
(a) Total expected remaining service lives	425.8
Number of Participants	
Active	47
Inactive*	112
(b) Total	159
(c) Average of expected remaining service lives of all active and inactive participants (a)/(b)	2.7
(d1) Difference between expected and actual demographic experience	(3,809,187)
(d2) Portion allocated to expense (d1)/(c)	(1,410,810)
(d3) Deferred portion (d1)-(d2)	(2,398,377)
(e1) Changes in assumptions	(25,133,680)
(e2) Portion allocated to expense (e1)/(c)	(9,308,770)
(e3) Deferred portion (e1)-(e2)	(15,824,910)
(f1) Difference between expected and actual investment experience	15,428
(f2) Portion allocated to expense (f1)/(5)	3,086
(f3) Deferred portion (f1)-(f2)	12,343
(g) Total Deferred Portion	(18,210,944)

*Includes retirees and vested inactive participants.

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

	2018	2017
Actuarially determined contribution	\$ 3,083,916	\$ 3,083,916
Plan Contributions	\$ 1,628,411	\$ 1,472,713
Contribution excess (deficiency)	(1,455,505)	(1,611,203)
 Covered employee payroll	 \$ 3,333,571	 \$ 4,493,845
 Actual Contributions as a percentage of covered payroll	 48.85%	 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
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

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
2018	\$56,355,649	\$701,126	\$55,654,523	\$1,920,081	\$1,205,910	\$1,436,542	\$0	\$1,436,542
2019	57,996,607	725,665	57,270,942	1,909,031	1,192,834	1,502,071	0	1,502,071
2020	59,722,740	751,063	58,971,677	1,965,722	1,152,855	1,608,914	0	1,608,914
2021	61,367,914	777,350	60,590,564	2,019,685	1,124,003	1,695,200	0	1,695,200
2022	62,962,070	804,557	62,157,513	2,071,917	1,102,326	1,792,540	0	1,792,540
2023	64,499,863	832,716	63,667,147	2,122,238	1,088,059	1,884,088	0	1,884,088
2024	65,993,140	861,861	65,131,279	2,171,042	1,051,062	1,991,386	0	1,991,386
2025	67,401,919	892,026	66,509,893	2,216,996	1,018,635	2,107,982	0	2,107,982
2026	68,719,444	923,247	67,796,197	2,259,873	978,758	2,220,029	0	2,220,029
2027	69,940,247	955,561	68,984,686	2,299,489	893,045	2,378,136	0	2,378,136
2028	70,965,603	989,006	69,976,597	2,332,553	798,204	2,541,980	0	2,541,980
2029	71,778,660	1,023,621	70,755,039	2,358,501	723,464	2,682,298	0	2,682,298
2030	72,412,745	1,059,448	71,353,297	2,378,443	658,435	2,816,570	0	2,816,570
2031	72,884,386	1,096,529	71,787,857	2,392,928	550,496	2,987,700	0	2,987,700
2032	73,107,831	1,134,908	71,972,923	2,399,097	436,593	3,154,178	0	3,154,178
2033	73,073,779	1,174,630	71,899,149	2,396,638	335,554	3,302,107	0	3,302,107
2034	72,805,743	1,215,742	71,590,001	2,386,333	271,810	3,435,458	0	3,435,458
2035	72,349,371	1,258,293	71,091,078	2,369,702	202,921	3,569,718	0	3,569,718
2036	71,693,085	1,302,333	70,390,752	2,346,358	147,892	3,681,938	0	3,681,938
2037	70,868,902	1,347,915	69,520,987	2,317,366	110,178	3,773,475	0	3,773,475
2038	69,908,952	1,395,092	68,513,860	2,283,795	82,193	3,857,205	0	3,857,205
2039	68,827,828	1,443,920	67,383,908	2,246,130	62,316	3,946,009	0	3,946,009
2040	67,624,365	1,494,457	66,129,908	2,204,330	44,833	4,010,205	0	4,010,205
2041	66,324,128	1,546,763	64,777,365	2,159,245	31,732	4,060,727	0	4,060,727
2042	64,944,199	1,600,900	63,343,299	2,111,443	23,429	4,121,635	0	4,121,635

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
2043	\$63,475,630	\$1,656,932	\$61,818,698	\$2,060,623	\$17,384	\$4,176,127	\$0	\$4,176,127
2044	61,925,495	1,714,925	60,210,570	2,007,019	13,654	4,217,532	0	4,217,532
2045	60,301,480	1,774,947	58,526,533	1,950,884	9,291	4,232,895	0	4,232,895
2046	58,637,913	1,837,070	56,800,843	1,893,361	6,761	4,258,686	0	4,258,686
2047	56,923,738	1,901,367	55,022,371	1,834,079	4,407	4,276,816	0	4,276,816
2048	55,165,714	1,967,915	53,197,799	1,773,260	3,204	4,310,408	0	4,310,408
2049	53,345,381	2,036,792	51,308,589	1,710,286	2,396	4,315,896	0	4,315,896
2050	51,485,683	2,108,080	49,377,603	1,645,920	930	4,338,688	0	4,338,688
2051	49,571,676	2,181,863	47,389,813	1,579,660	602	4,355,506	0	4,355,506
2052	47,609,142	2,258,228	45,350,914	1,511,697	331	4,366,978	0	4,366,978
2053	45,602,402	2,337,266	43,265,136	1,442,171	166	4,372,929	0	4,372,929
2054	43,556,196	2,419,070	41,137,126	1,371,237	0	4,373,275	0	4,373,275
2055	41,475,541	2,503,737	38,971,804	1,299,060	0	4,367,672	0	4,367,672
2056	39,366,198	2,591,368	36,774,830	1,225,828	0	4,356,005	0	4,356,005
2057	37,234,163	2,682,066	34,552,097	1,151,736	0	4,337,982	0	4,337,982
2058	35,086,026	2,775,938	32,310,088	1,077,003	0	4,313,238	0	4,313,238
2059	32,929,045	2,873,096	30,055,949	1,001,865	0	4,281,249	0	4,281,249
2060	30,771,204	2,973,654	27,797,550	926,585	0	4,241,436	0	4,241,436
2061	28,621,251	3,077,732	25,543,519	851,451	0	4,193,204	0	4,193,204
2062	26,488,633	3,185,453	23,303,180	776,773	0	4,135,975	0	4,135,975
2063	24,383,473	3,296,944	21,086,529	702,884	0	4,069,202	0	4,069,202
2064	22,316,447	3,412,337	18,904,110	630,137	0	3,992,308	0	3,992,308
2065	20,298,590	3,531,769	16,766,821	558,894	0	3,904,672	0	3,904,672
2066	18,341,092	3,655,381	14,685,711	489,524	0	3,805,796	0	3,805,796
2067	16,455,074	3,783,319	12,671,755	422,392	0	3,695,259	0	3,695,259

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	30 Year Open Amortization UAAL	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions	
2068	\$14,651,275	\$3,915,735	\$10,735,540	\$357,851	\$0	\$3,572,756	\$0	\$3,572,756
2069	12,939,694	4,052,786	8,886,908	296,230	0	3,438,205	0	3,438,205
2070	11,329,374	4,194,634	7,134,740	237,825	0	3,291,850	0	3,291,850
2071	9,828,089	4,341,446	5,486,643	182,888	0	3,134,168	0	3,134,168
2072	8,442,127	4,493,397	3,948,730	131,624	0	2,965,817	0	2,965,817
2073	7,175,986	4,650,666	2,525,320	84,177	0	2,788,013	0	2,788,013
2074	6,032,213	4,813,439	1,218,774	40,626	0	2,602,335	0	2,602,335
2075	5,011,246	4,981,909	29,337	978	0	2,410,636	0	2,410,636
2076	4,111,383	5,156,276	(1,044,893)	0	0	2,214,899	0	2,214,899
2077	3,328,855	5,336,746	(2,007,891)	0	0	2,017,151	0	2,017,151
2078	2,657,947	5,523,532	(2,865,585)	0	0	1,819,534	0	1,819,534
2079	2,091,274	5,716,856	(3,625,582)	0	0	1,624,392	0	1,624,392
2080	1,620,145	5,916,946	(4,296,801)	0	0	1,145,050	0	1,145,050
2081	1,234,892	5,830,100	(4,595,208)	0	0	0	0	0
2082	925,309	4,761,961	(3,836,652)	0	0	0	0	0
2083	681,044	3,834,006	(3,152,962)	0	0	0	0	0
2084	491,982	3,039,794	(2,547,812)	0	0	0	0	0
2085	348,538	2,370,831	(2,022,293)	0	0	0	0	0
2086	241,961	1,816,953	(1,574,992)	0	0	0	0	0
2087	164,473	1,366,747	(1,202,274)	0	0	0	0	0
2088	109,389	1,007,872	(898,483)	0	0	0	0	0
2089	71,134	727,703	(656,569)	0	0	0	0	0
2090	45,199	513,728	(468,529)	0	0	0	0	0
2091	28,050	354,186	(326,136)	0	0	0	0	0
2092	16,992	238,108	(221,116)	0	0	0	0	0

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
2093	\$10,039	\$155,804	\$(145,765)	\$0	\$0	\$0	\$0	\$0
2094	5,774	98,936	(93,162)	0	0	0	0	0
2095	3,231	60,849	(57,618)	0	0	0	0	0
2096	1,757	36,213	(34,456)	0	0	0	0	0
2097	923	20,693	(19,770)	0	0	0	0	0
2098	460	11,243	(10,783)	0	0	0	0	0
2099	211	5,770	(5,559)	0	0	0	0	0
2100	94	2,923	(2,829)	0	0	0	0	0
2101	36	1,496	(1,460)	0	0	0	0	0
2102	12	899	(887)	0	0	0	0	0
2103	0	581	(581)	0	0	0	0	0
2104	0	601	(601)	0	0	0	0	0
2105	0	622	(622)	0	0	0	0	0
2106	0	644	(644)	0	0	0	0	0
2107	0	667	(667)	0	0	0	0	0
2108	0	690	(690)	0	0	0	0	0
2109	0	714	(714)	0	0	0	0	0
2110	0	739	(739)	0	0	0	0	0
2111	0	765	(765)	0	0	0	0	0
2112	0	792	(792)	0	0	0	0	0
2113	0	820	(820)	0	0	0	0	0
2114	0	849	(849)	0	0	0	0	0
2115	0	879	(879)	0	0	0	0	0
2116	0	910	(910)	0	0	0	0	0
2117	0	942	(942)	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

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	\$701,126	\$1,436,542	\$(1,436,542)	\$0	\$24,539	\$725,665
2019	725,665	1,502,071	(1,502,071)	0	25,398	751,063
2020	751,063	1,608,914	(1,608,914)	0	26,287	777,350
2021	777,350	1,695,200	(1,695,200)	0	27,207	804,557
2022	804,557	1,792,540	(1,792,540)	0	28,159	832,716
2023	832,716	1,884,088	(1,884,088)	0	29,145	861,861
2024	861,861	1,991,386	(1,991,386)	0	30,165	892,026
2025	892,026	2,107,982	(2,107,982)	0	31,221	923,247
2026	923,247	2,220,029	(2,220,029)	0	32,314	955,561
2027	955,561	2,378,136	(2,378,136)	0	33,445	989,006
2028	989,006	2,541,980	(2,541,980)	0	34,615	1,023,621
2029	1,023,621	2,682,298	(2,682,298)	0	35,827	1,059,448
2030	1,059,448	2,816,570	(2,816,570)	0	37,081	1,096,529
2031	1,096,529	2,987,700	(2,987,700)	0	38,379	1,134,908
2032	1,134,908	3,154,178	(3,154,178)	0	39,722	1,174,630
2033	1,174,630	3,302,107	(3,302,107)	0	41,112	1,215,742
2034	1,215,742	3,435,458	(3,435,458)	0	42,551	1,258,293
2035	1,258,293	3,569,718	(3,569,718)	0	44,040	1,302,333
2036	1,302,333	3,681,938	(3,681,938)	0	45,582	1,347,915
2037	1,347,915	3,773,475	(3,773,475)	0	47,177	1,395,092
2038	1,395,092	3,857,205	(3,857,205)	0	48,828	1,443,920
2039	1,443,920	3,946,009	(3,946,009)	0	50,537	1,494,457
2040	1,494,457	4,010,205	(4,010,205)	0	52,306	1,546,763
2041	1,546,763	4,060,727	(4,060,727)	0	54,137	1,600,900
2042	1,600,900	4,121,635	(4,121,635)	0	56,032	1,656,932

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	\$1,656,932	\$4,176,127	\$(4,176,127)	\$0	\$57,993	\$1,714,925
2044	1,714,925	4,217,532	(4,217,532)	0	60,022	1,774,947
2045	1,774,947	4,232,895	(4,232,895)	0	62,123	1,837,070
2046	1,837,070	4,258,686	(4,258,686)	0	64,297	1,901,367
2047	1,901,367	4,276,816	(4,276,816)	0	66,548	1,967,915
2048	1,967,915	4,310,408	(4,310,408)	0	68,877	2,036,792
2049	2,036,792	4,315,896	(4,315,896)	0	71,288	2,108,080
2050	2,108,080	4,338,688	(4,338,688)	0	73,783	2,181,863
2051	2,181,863	4,355,506	(4,355,506)	0	76,365	2,258,228
2052	2,258,228	4,366,978	(4,366,978)	0	79,038	2,337,266
2053	2,337,266	4,372,929	(4,372,929)	0	81,804	2,419,070
2054	2,419,070	4,373,275	(4,373,275)	0	84,667	2,503,737
2055	2,503,737	4,367,672	(4,367,672)	0	87,631	2,591,368
2056	2,591,368	4,356,005	(4,356,005)	0	90,698	2,682,066
2057	2,682,066	4,337,982	(4,337,982)	0	93,872	2,775,938
2058	2,775,938	4,313,238	(4,313,238)	0	97,158	2,873,096
2059	2,873,096	4,281,249	(4,281,249)	0	100,558	2,973,654
2060	2,973,654	4,241,436	(4,241,436)	0	104,078	3,077,732
2061	3,077,732	4,193,204	(4,193,204)	0	107,721	3,185,453
2062	3,185,453	4,135,975	(4,135,975)	0	111,491	3,296,944
2063	3,296,944	4,069,202	(4,069,202)	0	115,393	3,412,337
2064	3,412,337	3,992,308	(3,992,308)	0	119,432	3,531,769
2065	3,531,769	3,904,672	(3,904,672)	0	123,612	3,655,381
2066	3,655,381	3,805,796	(3,805,796)	0	127,938	3,783,319
2067	3,783,319	3,695,259	(3,695,259)	0	132,416	3,915,735

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	\$3,915,735	\$3,572,756	\$(3,572,756)	\$0	\$137,051	\$4,052,786
2069	4,052,786	3,438,205	(3,438,205)	0	141,848	4,194,634
2070	4,194,634	3,291,850	(3,291,850)	0	146,812	4,341,446
2071	4,341,446	3,134,168	(3,134,168)	0	151,951	4,493,397
2072	4,493,397	2,965,817	(2,965,817)	0	157,269	4,650,666
2073	4,650,666	2,788,013	(2,788,013)	0	162,773	4,813,439
2074	4,813,439	2,602,335	(2,602,335)	0	168,470	4,981,909
2075	4,981,909	2,410,636	(2,410,636)	0	174,367	5,156,276
2076	5,156,276	2,214,899	(2,214,899)	0	180,470	5,336,746
2077	5,336,746	2,017,151	(2,017,151)	0	186,786	5,523,532
2078	5,523,532	1,819,534	(1,819,534)	0	193,324	5,716,856
2079	5,716,856	1,624,392	(1,624,392)	0	200,090	5,916,946
2080	5,916,946	1,145,050	(1,433,934)	0	202,038	5,830,100
2081	5,830,100	0	(1,250,312)	0	182,173	4,761,961
2082	4,761,961	0	(1,075,797)	0	147,842	3,834,006
2083	3,834,006	0	(912,435)	0	118,223	3,039,794
2084	3,039,794	0	(762,020)	0	93,057	2,370,831
2085	2,370,831	0	(625,904)	0	72,026	1,816,953
2086	1,816,953	0	(504,963)	0	54,757	1,366,747
2087	1,366,747	0	(399,716)	0	40,841	1,007,872
2088	1,007,872	0	(310,019)	0	29,850	727,703
2089	727,703	0	(235,326)	0	21,351	513,728
2090	513,728	0	(174,469)	0	14,927	354,186
2091	354,186	0	(126,265)	0	10,187	238,108
2092	238,108	0	(89,079)	0	6,775	155,804

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	\$155,804	\$0	\$(61,249)	\$0	\$4,381	\$98,936
2094	98,936	0	(40,835)	0	2,748	60,849
2095	60,849	0	(26,305)	0	1,669	36,213
2096	36,213	0	(16,499)	0	979	20,693
2097	20,693	0	(9,999)	0	549	11,243
2098	11,243	0	(5,766)	0	293	5,770
2099	5,770	0	(2,997)	0	150	2,923
2100	2,923	0	(1,503)	0	76	1,496
2101	1,496	0	(638)	0	41	899
2102	899	0	(343)	0	25	581
2103	581	0	0	0	20	601
2104	601	0	0	0	21	622
2105	622	0	0	0	22	644
2106	644	0	0	0	23	667
2107	667	0	0	0	23	690
2108	690	0	0	0	24	714
2109	714	0	0	0	25	739
2110	739	0	0	0	26	765
2111	765	0	0	0	27	792
2112	792	0	0	0	28	820
2113	820	0	0	0	29	849
2114	849	0	0	0	30	879
2115	879	0	0	0	31	910
2116	910	0	0	0	32	942
2117	942	0	0	0	33	975

*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 0.00% of pension payroll.

****Assumed rate of return used to project the Fiduciary Net Position was 3.50%.

Table 3: Actuarial Present Values of Projected Benefit Payments

Year	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****
(a)	(b)	(c)	(d)	(e)	(f)	(g)=(e)/(1+x.xx%)^(a)	(h) = (c)/(1 + y.yy%)^(a)
1	\$701,126	\$1,436,542	\$701,126	\$735,416	\$677,416	\$714,551	\$1,391,205
2	725,665	1,502,071	725,665	776,406	677,416	732,975	1,408,756
3	751,063	1,608,914	751,063	857,851	677,416	786,887	1,461,339
4	777,350	1,695,200	777,350	917,850	677,416	818,036	1,491,117
5	804,557	1,792,540	804,557	987,983	677,415	855,560	1,526,977
6	832,716	1,884,088	832,716	1,051,372	677,415	884,622	1,554,310
7	861,861	1,991,386	861,861	1,129,525	677,415	923,416	1,590,979
8	892,026	2,107,982	892,026	1,215,956	677,415	965,872	1,630,980
9	923,247	2,220,029	923,247	1,296,782	677,415	1,000,850	1,663,463
10	955,561	2,378,136	955,561	1,422,575	677,415	1,066,786	1,725,695
11	989,006	2,541,980	989,006	1,552,974	677,415	1,131,531	1,786,373
12	1,023,621	2,682,298	1,023,621	1,658,677	677,415	1,174,261	1,825,491
13	1,059,448	2,816,570	1,059,448	1,757,122	677,415	1,208,662	1,856,376
14	1,096,529	2,987,700	1,096,529	1,891,171	677,416	1,263,962	1,907,020
15	1,134,908	3,154,178	1,134,908	2,019,270	677,416	1,311,287	1,949,742
16	1,174,630	3,302,107	1,174,630	2,127,477	677,416	1,342,358	1,976,764
17	1,215,742	3,435,458	1,215,742	2,219,716	677,416	1,360,822	1,991,687
18	1,258,293	3,569,718	1,258,293	2,311,425	677,416	1,376,841	2,004,209
19	1,302,333	3,681,938	1,302,333	2,379,605	677,416	1,377,238	2,001,973
20	1,347,915	3,773,475	1,347,915	2,425,560	677,416	1,364,007	1,986,992
21	1,395,092	3,857,205	1,395,092	2,462,113	677,416	1,345,280	1,966,980
22	1,443,920	3,946,009	1,443,920	2,502,089	677,416	1,328,335	1,948,759
23	1,494,457	4,010,205	1,494,457	2,515,748	677,416	1,297,694	1,917,959
24	1,546,763	4,060,727	1,546,763	2,513,964	677,416	1,259,982	1,880,829
25	1,600,900	4,121,635	1,600,900	2,520,735	677,416	1,227,532	1,848,791

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	\$1,656,932	\$4,176,127	\$1,656,932	\$2,519,195	\$677,416	\$1,191,976	\$1,814,114
27	1,714,925	4,217,532	1,714,925	2,502,607	677,416	1,150,532	1,774,279
28	1,774,947	4,232,895	1,774,947	2,457,948	677,416	1,097,941	1,724,542
29	1,837,070	4,258,686	1,837,070	2,421,616	677,416	1,051,022	1,680,292
30	1,901,367	4,276,816	1,901,367	2,375,449	677,416	1,001,734	1,634,189
31	1,967,915	4,310,408	1,967,915	2,342,493	677,416	959,810	1,595,045
32	2,036,792	4,315,896	2,036,792	2,279,104	677,416	907,343	1,546,672
33	2,108,080	4,338,688	2,108,080	2,230,608	677,416	862,841	1,505,769
34	2,181,863	4,355,506	2,181,863	2,173,643	677,416	816,951	1,463,900
35	2,258,228	4,366,978	2,258,228	2,108,750	677,416	770,075	1,421,433
36	2,337,266	4,372,929	2,337,266	2,035,663	677,416	722,294	1,378,449
37	2,419,070	4,373,275	2,419,070	1,954,205	677,416	673,718	1,335,050
38	2,503,737	4,367,672	2,503,737	1,863,935	677,416	624,366	1,291,260
39	2,591,368	4,356,005	2,591,368	1,764,637	677,416	574,333	1,247,167
40	2,682,066	4,337,982	2,682,066	1,655,916	677,416	523,657	1,202,809
41	2,775,938	4,313,238	2,775,938	1,537,300	677,416	472,354	1,158,204
42	2,873,096	4,281,249	2,873,096	1,408,153	677,416	420,397	1,113,333
43	2,973,654	4,241,436	2,973,654	1,267,782	677,416	367,751	1,068,170
44	3,077,732	4,193,204	3,077,732	1,115,472	677,416	314,390	1,022,695
45	3,185,453	4,135,975	3,185,453	950,522	677,416	260,299	976,901
46	3,296,944	4,069,202	3,296,944	772,258	677,416	205,481	930,796
47	3,412,337	3,992,308	3,412,337	579,971	677,416	149,940	884,387
48	3,531,769	3,904,672	3,531,769	372,903	677,416	93,671	837,675
49	3,655,381	3,805,796	3,655,381	150,415	677,416	36,711	790,695
50	3,783,319	3,695,259	3,695,259	0	661,649	0	743,500

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	\$3,915,735	\$3,572,756	\$3,572,756	\$0	\$618,081	\$0	\$696,165
52	4,052,786	3,438,205	3,438,205	0	574,690	0	648,804
53	4,194,634	3,291,850	3,291,850	0	531,620	0	601,582
54	4,341,446	3,134,168	3,134,168	0	489,039	0	554,689
55	4,493,397	2,965,817	2,965,817	0	447,121	0	508,328
56	4,650,666	2,788,013	2,788,013	0	406,102	0	462,772
57	4,813,439	2,602,335	2,602,335	0	366,238	0	418,320
58	4,981,909	2,410,636	2,410,636	0	327,787	0	375,275
59	5,156,276	2,214,899	2,214,899	0	290,987	0	333,922
60	5,336,746	2,017,151	2,017,151	0	256,046	0	294,511
61	5,523,532	1,819,534	1,819,534	0	223,151	0	257,274
62	5,716,856	1,624,392	1,624,392	0	192,482	0	222,433
63	5,916,946	1,433,934	1,433,934	0	164,167	0	190,156
64	5,830,100	1,250,312	1,250,312	0	138,304	0	160,573
65	4,761,961	1,075,797	1,075,797	0	114,976	0	133,800
66	3,834,006	912,435	912,435	0	94,219	0	109,901
67	3,039,794	762,020	762,020	0	76,026	0	88,887
68	2,370,831	625,904	625,904	0	60,334	0	70,705
69	1,816,953	504,963	504,963	0	47,030	0	55,243
70	1,366,747	399,716	399,716	0	35,969	0	42,349
71	1,007,872	310,019	310,019	0	26,954	0	31,809
72	727,703	235,326	235,326	0	19,768	0	23,383
73	513,728	174,469	174,469	0	14,160	0	16,789
74	354,186	126,265	126,265	0	9,901	0	11,767
75	238,108	89,079	89,079	0	6,749	0	8,040

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	\$155,804	\$61,249	\$61,249	\$0	\$4,484	\$0	\$5,353
77	98,936	40,835	40,835	0	2,888	0	3,456
78	60,849	26,305	26,305	0	1,798	0	2,156
79	36,213	16,499	16,499	0	1,089	0	1,310
80	20,693	9,999	9,999	0	638	0	769
81	11,243	5,766	5,766	0	355	0	429
82	5,770	2,997	2,997	0	178	0	216
83	2,923	1,503	1,503	0	86	0	105
84	1,496	638	638	0	35	0	43
85	899	343	343	0	18	0	22
86	581	0	0	0	0	0	0
87	601	0	0	0	0	0	0
88	622	0	0	0	0	0	0
89	644	0	0	0	0	0	0
90	667	0	0	0	0	0	0
91	690	0	0	0	0	0	0
92	714	0	0	0	0	0	0
93	739	0	0	0	0	0	0
94	765	0	0	0	0	0	0
95	792	0	0	0	0	0	0
96	820	0	0	0	0	0	0
97	849	0	0	0	0	0	0
98	879	0	0	0	0	0	0
99	910	0	0	0	0	0	0
100	942	0	0	0	0	0	0
					\$39,398,494	\$43,368,934	\$82,767,428

* From Table 2.

**3.50% was the assumed rate of return used to project the plan's fiduciary net position and is the discount rate used for column (f).

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

****3.26% 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).