

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

Actuarial Information for GASB Statements 74/75

June 30, 2019

October 2, 2019

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 Statements No. 74/75 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 OPEB Liability

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

Total OPEB liability	\$35,154,783
Plan fiduciary net position	862,903
Plan’s net OPEB liability	\$34,291,880
Plan fiduciary net position as a percentage of the total OPEB liability	2.45%

Actuarial assumptions. The total OPEB liability was determined based on the data used for the OPEB valuation as of June 30, 2018, projected to June 30, 2019. 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 7.00%, which is the assumed long-term rate for the plan.

Sensitivity of the Discount Rate

	1% Decrease 6.00%	GASB 74 Discount Rate 7.00%	1% Increase 8.00%
Plan's Net OPEB Liability	\$40,053,985	\$34,291,880	\$29,717,252

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	\$29,663,450	\$34,291,880	\$40,449,799

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

	Year Ended <u>6/30/2019</u>
Total OPEB liability	
Service cost	\$448,946
Interest	2,426,171
Changes in benefit terms	-
Differences between expected and actual experience	(1,375,107)
Changes of assumptions	
Interest Assumption	(1,046,230)
Mortality Assumption	-
Total Assumptions	(1,046,230)
Benefit payments, including refunds of member contributions	(1,507,027)
Net change in total OPEB liability	(\$1,053,247)
Total OPEB liability-beginning	36,208,030
Total OPEB liability-ending (a)	35,154,783
Plan fiduciary net position	
Contributions-employer	1,557,027
Contributions-member	54,911
Net investment income	56,866
Benefit payments, including refunds of member contributions	(1,507,027)
Administrative Expense	-
Other	-
Net change in plan fiduciary net position	161,777
Plan fiduciary net position-beginning	701,126
Plan fiduciary net position-ending (b)	862,903
Plan's net OPEB liability-ending (a)-(b)	\$34,291,880
Plan fiduciary net position as a percentage of the total OPEB liability	2.45%

Additional Required Disclosures

	<u>06/30/2019</u>
Total expected remaining service lives	
Active Participants	393.2
Inactive Participants	0
(a) Total expected remaining service lives	393.2
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)	2.5
(d1) Difference between expected and actual demographic experience	(1,375,107)
(d2) Portion allocated to expense (d1)/(c)	(550,043)
(d3) Deferred portion (d1)-(d2)	(825,064)
(e1) Changes in assumptions	(1,046,230)
(e2) Portion allocated to expense (e1)/(c)	(418,492)
(e3) Deferred portion (e1)-(e2)	(627,738)
(f1) Difference between expected and actual investment experience	(5,622)
(f2) Portion allocated to expense (f1)/(c)	(1,124)
(f3) Deferred portion (f1)-(f2)	(4,498)
(g) Total Deferred Portion	(1,457,300)

LAST 10 FISCAL YEARS
Year Ended June 30

	<u>2019</u>	<u>2018</u>	<u>2017</u>
Actuarially determined contribution	\$ 3,125,991	\$ 3,083,916	\$ 3,083,916
Plan Contributions	\$ 1,557,027	\$ 1,628,411	\$ 1,472,713
Contribution excess (deficiency)	<u>(1,568,964)</u>	<u>(1,455,505)</u>	<u>(1,611,203)</u>
Covered employee payroll	\$ 3,618,888	\$ 3,333,571	\$ 4,493,845
Actual Contributions as a percentage of covered payroll	43.03%	48.85%	32.77%

Notes to Schedule

Valuation date:

June 30, 2018

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	30 Year Open Amortization UAAL	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions	
2019	\$32,433,826	\$862,903	\$31,570,923	\$1,721,440	\$424,769	\$1,455,457	\$0	\$1,455,457
2020	33,661,053	923,306	32,737,747	1,724,698	390,757	1,566,815	0	1,566,815
2021	34,848,060	987,937	33,860,123	1,783,827	377,891	1,652,289	0	1,652,289
2022	36,025,478	1,057,093	34,968,385	1,842,213	366,846	1,750,547	0	1,750,547
2023	37,182,198	1,131,090	36,051,108	1,899,253	359,804	1,839,155	0	1,839,155
2024	38,331,058	1,210,266	37,120,792	1,955,606	345,655	1,944,421	0	1,944,421
2025	39,448,176	1,294,985	38,153,191	2,009,995	334,102	2,058,559	0	2,058,559
2026	40,525,943	1,385,634	39,140,309	2,061,999	319,725	2,167,906	0	2,167,906
2027	41,564,383	1,482,628	40,081,755	2,111,597	290,271	2,323,973	0	2,323,973
2028	42,498,053	1,586,412	40,911,641	2,155,317	258,794	2,484,536	0	2,484,536
2029	43,315,720	1,697,461	41,618,259	2,192,543	233,743	2,625,814	0	2,625,814
2030	44,034,680	1,816,283	42,218,397	2,224,160	212,317	2,755,607	0	2,755,607
2031	44,666,525	1,943,423	42,723,102	2,250,749	177,305	2,921,151	0	2,921,151
2032	45,156,153	2,079,463	43,076,690	2,269,376	140,714	3,083,451	0	3,083,451
2033	45,496,315	2,225,025	43,271,290	2,279,628	108,716	3,227,947	0	3,227,947
2034	45,700,053	2,380,777	43,319,276	2,282,156	88,489	3,358,488	0	3,358,488
2035	45,785,231	2,547,431	43,237,800	2,277,864	65,937	3,489,853	0	3,489,853
2036	45,741,389	2,725,751	43,015,638	2,266,160	48,055	3,601,023	0	3,601,023
2037	45,586,733	2,916,554	42,670,179	2,247,961	35,793	3,690,581	0	3,690,581
2038	45,341,060	3,120,713	42,220,347	2,224,262	26,706	3,773,161	0	3,773,161
2039	45,009,796	3,339,163	41,670,633	2,195,302	20,230	3,859,229	0	3,859,229
2040	44,586,375	3,572,904	41,013,471	2,160,681	14,546	3,922,600	0	3,922,600
2041	44,090,172	3,823,007	40,267,165	2,121,364	10,285	3,973,004	0	3,973,004
2042	43,532,618	4,090,617	39,442,001	2,077,893	7,606	4,032,638	0	4,032,638
2043	42,901,718	4,376,960	38,524,758	2,029,570	5,654	4,086,193	0	4,086,193

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	
2044	\$42,200,558	\$4,683,347	\$37,517,211	\$1,976,491	\$4,448	\$4,132,105	\$0	\$4,132,105
2045	41,431,855	5,011,181	36,420,674	1,918,723	3,000	4,149,755	0	4,149,755
2046	40,625,006	5,361,964	35,263,042	1,857,736	2,185	4,176,110	0	4,176,110
2047	39,768,656	5,737,301	34,031,355	1,792,848	1,426	4,195,186	0	4,195,186
2048	38,867,407	6,138,912	32,728,495	1,724,210	1,038	4,227,997	0	4,227,997
2049	37,903,121	6,568,636	31,334,485	1,650,771	771	4,237,493	0	4,237,493
2050	36,894,659	7,028,441	29,866,218	1,573,419	299	4,259,960	0	4,259,960
2051	35,827,042	7,520,432	28,306,610	1,491,256	194	4,276,555	0	4,276,555
2052	34,702,924	8,046,862	26,656,062	1,404,301	108	4,287,917	0	4,287,917
2053	33,524,166	8,610,142	24,914,024	1,312,527	54	4,293,886	0	4,293,886
2054	32,293,011	9,212,852	23,080,159	1,215,914	0	4,294,387	0	4,294,387
2055	31,012,022	9,857,752	21,154,270	1,114,454	0	4,289,074	0	4,289,074
2056	29,684,373	10,547,795	19,136,578	1,008,158	0	4,277,851	0	4,277,851
2057	28,313,620	11,286,141	17,027,479	897,046	0	4,260,436	0	4,260,436
2058	26,903,934	12,076,171	14,827,763	781,160	0	4,236,481	0	4,236,481
2059	25,460,202	12,921,503	12,538,699	660,567	0	4,205,477	0	4,205,477
2060	23,988,144	13,826,008	10,162,136	535,364	0	4,166,867	0	4,166,867
2061	22,494,334	14,793,829	7,700,505	405,680	0	4,120,057	0	4,120,057
2062	20,986,220	15,829,397	5,156,823	271,673	0	4,064,497	0	4,064,497
2063	19,472,124	16,937,455	2,534,669	133,532	0	3,999,629	0	3,999,629
2064	17,961,147	18,123,077	(161,930)	0	0	3,924,896	0	3,924,896
2065	16,463,022	19,391,692	(2,928,670)	0	0	3,839,671	0	3,839,671
2066	14,987,985	20,749,110	(5,761,125)	0	0	3,743,450	0	3,743,450
2067	13,546,528	22,201,548	(8,655,020)	0	0	3,635,797	0	3,635,797
2068	12,149,146	23,755,656	(11,606,510)	0	0	1,742,500	0	1,742,500

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
2069	\$10,806,027	\$23,582,562	\$(12,776,535)	\$0	\$0	\$0	\$0	\$0
2070	9,526,763	21,729,676	(12,202,913)	0	0	0	0	0
2071	8,320,109	19,894,943	(11,574,834)	0	0	0	0	0
2072	7,193,710	18,091,190	(10,897,480)	0	0	0	0	0
2073	6,153,789	16,331,512	(10,177,723)	0	0	0	0	0
2074	5,204,929	14,628,715	(9,423,786)	0	0	0	0	0
2075	4,349,883	12,994,908	(8,645,025)	0	0	0	0	0
2076	3,589,472	11,441,192	(7,851,720)	0	0	0	0	0
2077	2,922,566	9,977,439	(7,054,873)	0	0	0	0	0
2078	2,346,174	8,612,187	(6,266,013)	0	0	0	0	0
2079	1,855,619	7,352,343	(5,496,724)	0	0	0	0	0
2080	1,444,821	6,202,981	(4,758,160)	0	0	0	0	0
2081	1,106,597	5,167,251	(4,060,654)	0	0	0	0	0
2082	833,053	4,246,313	(3,413,260)	0	0	0	0	0
2083	615,897	3,439,107	(2,823,210)	0	0	0	0	0
2084	446,843	2,742,372	(2,295,529)	0	0	0	0	0
2085	317,877	2,150,767	(1,832,890)	0	0	0	0	0
2086	221,551	1,657,176	(1,435,625)	0	0	0	0	0
2087	151,175	1,253,045	(1,101,870)	0	0	0	0	0
2088	100,912	928,663	(827,751)	0	0	0	0	0
2089	65,854	673,753	(607,899)	0	0	0	0	0
2090	41,986	477,840	(435,854)	0	0	0	0	0
2091	26,141	330,896	(304,755)	0	0	0	0	0
2092	15,885	223,368	(207,483)	0	0	0	0	0
2093	9,414	146,705	(137,291)	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
2094	\$5,432	\$93,443	\$(88,011)	\$0	\$0	\$0	\$0	\$0
2095	3,051	57,583	(54,532)	0	0	0	0	0
2096	1,662	34,265	(32,603)	0	0	0	0	0
2097	878	19,487	(18,609)	0	0	0	0	0
2098	439	10,432	(9,993)	0	0	0	0	0
2099	204	5,142	(4,938)	0	0	0	0	0
2100	89	2,365	(2,276)	0	0	0	0	0
2101	35	952	(917)	0	0	0	0	0
2102	12	344	(332)	0	0	0	0	0
2103	0	6	(6)	0	0	0	0	0
2104	0	6	(6)	0	0	0	0	0
2105	0	6	(6)	0	0	0	0	0
2106	0	6	(6)	0	0	0	0	0
2107	0	6	(6)	0	0	0	0	0
2108	0	6	(6)	0	0	0	0	0
2109	0	6	(6)	0	0	0	0	0
2110	0	6	(6)	0	0	0	0	0
2111	0	6	(6)	0	0	0	0	0
2112	0	6	(6)	0	0	0	0	0
2113	0	6	(6)	0	0	0	0	0
2114	0	6	(6)	0	0	0	0	0
2115	0	6	(6)	0	0	0	0	0
2116	0	6	(6)	0	0	0	0	0
2117	0	6	(6)	0	0	0	0	0
2118	0	6	(6)	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)
2019	\$862,903	\$1,455,457	\$(1,455,457)	\$0	\$60,403	\$923,306
2020	923,306	1,566,815	(1,566,815)	0	64,631	987,937
2021	987,937	1,652,289	(1,652,289)	0	69,156	1,057,093
2022	1,057,093	1,750,547	(1,750,547)	0	73,997	1,131,090
2023	1,131,090	1,839,155	(1,839,155)	0	79,176	1,210,266
2024	1,210,266	1,944,421	(1,944,421)	0	84,719	1,294,985
2025	1,294,985	2,058,559	(2,058,559)	0	90,649	1,385,634
2026	1,385,634	2,167,906	(2,167,906)	0	96,994	1,482,628
2027	1,482,628	2,323,973	(2,323,973)	0	103,784	1,586,412
2028	1,586,412	2,484,536	(2,484,536)	0	111,049	1,697,461
2029	1,697,461	2,625,814	(2,625,814)	0	118,822	1,816,283
2030	1,816,283	2,755,607	(2,755,607)	0	127,140	1,943,423
2031	1,943,423	2,921,151	(2,921,151)	0	136,040	2,079,463
2032	2,079,463	3,083,451	(3,083,451)	0	145,562	2,225,025
2033	2,225,025	3,227,947	(3,227,947)	0	155,752	2,380,777
2034	2,380,777	3,358,488	(3,358,488)	0	166,654	2,547,431
2035	2,547,431	3,489,853	(3,489,853)	0	178,320	2,725,751
2036	2,725,751	3,601,023	(3,601,023)	0	190,803	2,916,554
2037	2,916,554	3,690,581	(3,690,581)	0	204,159	3,120,713
2038	3,120,713	3,773,161	(3,773,161)	0	218,450	3,339,163
2039	3,339,163	3,859,229	(3,859,229)	0	233,741	3,572,904
2040	3,572,904	3,922,600	(3,922,600)	0	250,103	3,823,007
2041	3,823,007	3,973,004	(3,973,004)	0	267,610	4,090,617
2042	4,090,617	4,032,638	(4,032,638)	0	286,343	4,376,960
2043	4,376,960	4,086,193	(4,086,193)	0	306,387	4,683,347

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	\$4,683,347	\$4,132,105	\$(4,132,105)	\$0	\$327,834	\$5,011,181
2045	5,011,181	4,149,755	(4,149,755)	0	350,783	5,361,964
2046	5,361,964	4,176,110	(4,176,110)	0	375,337	5,737,301
2047	5,737,301	4,195,186	(4,195,186)	0	401,611	6,138,912
2048	6,138,912	4,227,997	(4,227,997)	0	429,724	6,568,636
2049	6,568,636	4,237,493	(4,237,493)	0	459,805	7,028,441
2050	7,028,441	4,259,960	(4,259,960)	0	491,991	7,520,432
2051	7,520,432	4,276,555	(4,276,555)	0	526,430	8,046,862
2052	8,046,862	4,287,917	(4,287,917)	0	563,280	8,610,142
2053	8,610,142	4,293,886	(4,293,886)	0	602,710	9,212,852
2054	9,212,852	4,294,387	(4,294,387)	0	644,900	9,857,752
2055	9,857,752	4,289,074	(4,289,074)	0	690,043	10,547,795
2056	10,547,795	4,277,851	(4,277,851)	0	738,346	11,286,141
2057	11,286,141	4,260,436	(4,260,436)	0	790,030	12,076,171
2058	12,076,171	4,236,481	(4,236,481)	0	845,332	12,921,503
2059	12,921,503	4,205,477	(4,205,477)	0	904,505	13,826,008
2060	13,826,008	4,166,867	(4,166,867)	0	967,821	14,793,829
2061	14,793,829	4,120,057	(4,120,057)	0	1,035,568	15,829,397
2062	15,829,397	4,064,497	(4,064,497)	0	1,108,058	16,937,455
2063	16,937,455	3,999,629	(3,999,629)	0	1,185,622	18,123,077
2064	18,123,077	3,924,896	(3,924,896)	0	1,268,615	19,391,692
2065	19,391,692	3,839,671	(3,839,671)	0	1,357,418	20,749,110
2066	20,749,110	3,743,450	(3,743,450)	0	1,452,438	22,201,548
2067	22,201,548	3,635,797	(3,635,797)	0	1,554,108	23,755,656
2068	23,755,656	1,742,500	(3,516,403)	0	1,600,809	23,582,562

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)
2069	\$23,582,562	\$0	\$(3,385,184)	\$0	\$1,532,298	\$21,729,676
2070	21,729,676	0	(3,242,329)	0	1,407,596	19,894,943
2071	19,894,943	0	(3,088,308)	0	1,284,555	18,091,190
2072	18,091,190	0	(2,923,731)	0	1,164,053	16,331,512
2073	16,331,512	0	(2,749,761)	0	1,046,964	14,628,715
2074	14,628,715	0	(2,567,939)	0	934,132	12,994,908
2075	12,994,908	0	(2,380,058)	0	826,342	11,441,192
2076	11,441,192	0	(2,188,055)	0	724,302	9,977,439
2077	9,977,439	0	(1,993,887)	0	628,635	8,612,187
2078	8,612,187	0	(1,799,707)	0	539,863	7,352,343
2079	7,352,343	0	(1,607,755)	0	458,393	6,202,981
2080	6,202,981	0	(1,420,231)	0	384,501	5,167,251
2081	5,167,251	0	(1,239,271)	0	318,333	4,246,313
2082	4,246,313	0	(1,067,099)	0	259,893	3,439,107
2083	3,439,107	0	(905,771)	0	209,036	2,742,372
2084	2,742,372	0	(757,073)	0	165,468	2,150,767
2085	2,150,767	0	(622,362)	0	128,771	1,657,176
2086	1,657,176	0	(502,544)	0	98,413	1,253,045
2087	1,253,045	0	(398,160)	0	73,778	928,663
2088	928,663	0	(309,098)	0	54,188	673,753
2089	673,753	0	(234,856)	0	38,943	477,840
2090	477,840	0	(174,293)	0	27,349	330,896
2091	330,896	0	(126,271)	0	18,743	223,368
2092	223,368	0	(89,178)	0	12,515	146,705
2093	146,705	0	(61,383)	0	8,121	93,443

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	\$93,443	\$0	\$(40,967)	\$0	\$5,107	\$57,583
2095	57,583	0	(26,424)	0	3,106	34,265
2096	34,265	0	(16,596)	0	1,818	19,487
2097	19,487	0	(10,067)	0	1,012	10,432
2098	10,432	0	(5,817)	0	527	5,142
2099	5,142	0	(3,031)	0	254	2,365
2100	2,365	0	(1,525)	0	112	952
2101	952	0	(652)	0	44	344
2102	344	0	(350)	0	12	6
2103	6	0	0	0	0	6
2104	6	0	0	0	0	6
2105	6	0	0	0	0	6
2106	6	0	0	0	0	6
2107	6	0	0	0	0	6
2108	6	0	0	0	0	6
2109	6	0	0	0	0	6
2110	6	0	0	0	0	6
2111	6	0	0	0	0	6
2112	6	0	0	0	0	6
2113	6	0	0	0	0	6
2114	6	0	0	0	0	6
2115	6	0	0	0	0	6
2116	6	0	0	0	0	6
2117	6	0	0	0	0	6
2118	6	0	0	0	0	6

*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 7.00%.

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*** $(g) = (e) / (1 + x.xx\%)^{(a)}$	Present Value Using the Single Discount Rate**** $(h) = (c) / (1 + y.yy\%)^{(a)}$
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	\$862,903	\$1,455,457	\$862,903	\$592,554	\$806,451	\$574,570	\$1,367,210
2	923,306	1,566,815	923,306	643,509	806,451	605,041	1,382,577
3	987,937	1,652,289	987,937	664,352	806,451	605,680	1,369,599
4	1,057,093	1,750,547	1,057,093	693,454	806,451	613,024	1,363,066
5	1,131,090	1,839,155	1,131,090	708,065	806,452	606,943	1,345,232
6	1,210,266	1,944,421	1,210,266	734,155	806,451	610,208	1,335,996
7	1,294,985	2,058,559	1,294,985	763,574	806,452	615,398	1,328,660
8	1,385,634	2,167,906	1,385,634	782,272	806,452	611,333	1,314,398
9	1,482,628	2,323,973	1,482,628	841,345	806,451	637,542	1,323,589
10	1,586,412	2,484,536	1,586,412	898,124	806,451	659,912	1,329,240
11	1,697,461	2,625,814	1,697,461	928,353	806,451	661,421	1,319,647
12	1,816,283	2,755,607	1,816,283	939,324	806,451	648,926	1,300,909
13	1,943,423	2,921,151	1,943,423	977,728	806,451	654,957	1,295,446
14	2,079,463	3,083,451	2,079,463	1,003,988	806,452	652,136	1,284,512
15	2,225,025	3,227,947	2,225,025	1,002,922	806,451	631,672	1,263,175
16	2,380,777	3,358,488	2,380,777	977,711	806,452	597,104	1,234,573
17	2,547,431	3,489,853	2,547,431	942,422	806,451	558,085	1,205,080
18	2,725,751	3,601,023	2,725,751	875,272	806,451	502,589	1,168,074
19	2,916,554	3,690,581	2,916,554	774,027	806,451	430,964	1,124,540
20	3,120,713	3,773,161	3,120,713	652,448	806,452	352,246	1,079,994
21	3,339,163	3,859,229	3,339,163	520,066	806,452	272,253	1,037,654
22	3,572,904	3,922,600	3,572,904	349,696	806,451	177,509	990,744
23	3,823,007	3,973,004	3,823,007	149,997	806,451	73,829	942,633
24	4,090,617	4,032,638	4,032,638	0	795,021	0	898,770
25	4,376,960	4,086,193	4,086,193	0	752,878	0	855,488

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	\$4,683,347	\$4,132,105	\$4,132,105	\$0	\$711,530	\$0	\$812,647
27	5,011,181	4,149,755	4,149,755	0	667,822	0	766,636
28	5,361,964	4,176,110	4,176,110	0	628,096	0	724,727
29	5,737,301	4,195,186	4,195,186	0	589,687	0	683,895
30	6,138,912	4,227,997	4,227,997	0	555,420	0	647,454
31	6,568,636	4,237,493	4,237,493	0	520,250	0	609,563
32	7,028,441	4,259,960	4,259,960	0	488,793	0	575,640
33	7,520,432	4,276,555	4,276,555	0	458,595	0	542,845
34	8,046,862	4,287,917	4,287,917	0	429,732	0	511,286
35	8,610,142	4,293,886	4,293,886	0	402,178	0	480,954
36	9,212,852	4,294,387	4,294,387	0	375,911	0	451,846
37	9,857,752	4,289,074	4,289,074	0	350,884	0	423,924
38	10,547,795	4,277,851	4,277,851	0	327,071	0	397,179
39	11,286,141	4,260,436	4,260,436	0	304,429	0	371,578
40	12,076,171	4,236,481	4,236,481	0	282,914	0	347,086
41	12,921,503	4,205,477	4,205,477	0	262,470	0	323,656
42	13,826,008	4,166,867	4,166,867	0	243,047	0	301,240
43	14,793,829	4,120,057	4,120,057	0	224,595	0	279,797
44	15,829,397	4,064,497	4,064,497	0	207,072	0	259,288
45	16,937,455	3,999,629	3,999,629	0	190,436	0	239,679
46	18,123,077	3,924,896	3,924,896	0	174,652	0	220,940
47	19,391,692	3,839,671	3,839,671	0	159,682	0	203,038
48	20,749,110	3,743,450	3,743,450	0	145,496	0	185,948
49	22,201,548	3,635,797	3,635,797	0	132,067	0	169,650
50	23,755,656	3,516,403	3,516,403	0	119,374	0	154,131

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	\$23,582,562	\$3,385,184	\$3,385,184	\$0	\$107,401	\$0	\$139,382
52	21,729,676	3,242,329	3,242,329	0	96,139	0	125,406
53	19,894,943	3,088,308	3,088,308	0	85,582	0	112,207
54	18,091,190	2,923,731	2,923,731	0	75,720	0	99,786
55	16,331,512	2,749,761	2,749,761	0	66,556	0	88,158
56	14,628,715	2,567,939	2,567,939	0	58,089	0	77,337
57	12,994,908	2,380,058	2,380,058	0	50,317	0	67,333
58	11,441,192	2,188,055	2,188,055	0	43,231	0	58,148
59	9,977,439	1,993,887	1,993,887	0	36,818	0	49,775
60	8,612,187	1,799,707	1,799,707	0	31,058	0	42,204
61	7,352,343	1,607,755	1,607,755	0	25,930	0	35,416
62	6,202,981	1,420,231	1,420,231	0	21,407	0	29,389
63	5,167,251	1,239,271	1,239,271	0	17,458	0	24,089
64	4,246,313	1,067,099	1,067,099	0	14,049	0	19,485
65	3,439,107	905,771	905,771	0	11,145	0	15,536
66	2,742,372	757,073	757,073	0	8,706	0	12,198
67	2,150,767	622,362	622,362	0	6,689	0	9,420
68	1,657,176	502,544	502,544	0	5,048	0	7,145
69	1,253,045	398,160	398,160	0	3,737	0	5,318
70	928,663	309,098	309,098	0	2,712	0	3,878
71	673,753	234,856	234,856	0	1,926	0	2,768
72	477,840	174,293	174,293	0	1,336	0	1,930
73	330,896	126,271	126,271	0	904	0	1,313
74	223,368	89,178	89,178	0	597	0	871
75	146,705	61,383	61,383	0	384	0	563

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	\$93,443	\$40,967	\$40,967	\$0	\$239	\$0	\$353
77	57,583	26,424	26,424	0	144	0	214
78	34,265	16,596	16,596	0	85	0	126
79	19,487	10,067	10,067	0	48	0	72
80	10,432	5,817	5,817	0	26	0	39
81	5,142	3,031	3,031	0	13	0	19
82	2,365	1,525	1,525	0	6	0	9
83	952	652	652	0	2	0	4
84	344	350	344	6	1	0	3
85	6	0	0	0	0	0	0
86	6	0	0	0	0	0	0
87	6	0	0	0	0	0	0
88	6	0	0	0	0	0	0
89	6	0	0	0	0	0	0
90	6	0	0	0	0	0	0
91	6	0	0	0	0	0	0
92	6	0	0	0	0	0	0
93	6	0	0	0	0	0	0
94	6	0	0	0	0	0	0
95	6	0	0	0	0	0	0
96	6	0	0	0	0	0	0
97	6	0	0	0	0	0	0
98	6	0	0	0	0	0	0
99	6	0	0	0	0	0	0
100	6	0	0	0	0	0	0
					\$29,821,985	\$12,353,342	\$42,175,327

* From Table 2.

**7.00 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% Municipal bond rate is the "Fidelity Index 20 Year GO AA Index" as of June 30, 2019 per Finance Director.

****6.45% was the single discount rate the 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).