

Genesee County Employees Retirement System
Actuarial Information for GASB Statements 67/68
December 31, 2016





May 15, 2017

The Retirement Commission
1101 Beach Street
Flint, Michigan 48502-1453

Dear Retirement Commission:

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 December 31, 2016.

Respectfully submitted,

A handwritten signature in dark ink that reads 'Sandra W. Rodwan'. The signature is written in a cursive style.

Sandra W. Rodwan
Member, American Academy of Actuaries

Net Pension Liability

The components of the net pension liability at December 31, 2016 were as follows:

Total pension liability	\$711,504,190
Plan fiduciary net position	431,569,064
County's net pension liability	\$279,935,126
Plan fiduciary net position as a percentage of the total pension liability	60.66%

Actuarial assumptions. The total pension liability was determined based on the annual actuarial valuation as of December 31, 2016. The following actuarial assumptions were applied to compute the total pension liability:

Actuarial Cost Method	Entry Age
Inflation	3.00%
Salary Increases	3.0%-7.03% (includes inflation)
Cost of Living Adjustments	Varies depending on Benefit Group

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

Discount rate. The discount rate used to measure the total pension liability was 6.07%. 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 County Contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the 6.07% 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 67/68, paragraph 44.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the County's net pension liability, calculated using the discount rate of 6.07%, as well as what the County's net pension liability would be if it were calculated using a discount rate that is 1% lower (5.07%) or 1% higher (7.07%) than the current rate:

Employer	1% Decrease Rate 5.07%	Computed GASB 67/68 Rate 6.07%	1% Increase Rate 7.07%
General & Sheriffs	\$198,932,002	\$156,995,533	\$121,617,969
Water & Waste	37,203,510	28,397,879	20,958,617
District Library	9,803,507	7,519,633	5,586,386
Mental Health	63,016,198	47,896,626	35,089,777
Road Commission	48,371,691	37,787,274	28,806,692
Mt. Morris	2,222,797	1,338,181	600,551
GCERS Net Pension Liability	\$359,549,705	\$279,935,126	\$212,659,992

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

	General & Sheriffs	Water & Waste	District Library	Mental Health	Road Comm.	Mt. Morris	Year Ended 12/31/2016
Service cost	\$3,462,442	\$1,541,981	\$363,603	\$1,998,936	\$1,797,650	\$139,779	\$9,304,391
Interest	22,270,704	4,014,166	1,131,364	7,676,712	5,130,417	411,383	40,634,746
Changes in benefit terms							
Differences between expected and actual experience	(13,052,891)	(2,164,986)	(279,694)	(5,174,366)	(4,029,098)	(312,899)	(25,013,934)
Changes in assumptions used for TPL							
Discount rate assumption	(20,473,749)	(4,302,513)	(1,116,261)	(7,390,677)	(5,176,159)	(430,602)	(38,889,961)
Demographic assumptions	10,155,832	1,742,189	444,450	2,515,646	6,968,581	276,387	22,103,085
Total due to TPL assumption changes	(10,317,917)	(2,560,324)	(671,811)	(4,875,031)	1,792,422	(154,215)	(16,786,876)
Benefit payments, including refunds of member contributions	(27,615,228)	(3,536,526)	(1,220,113)	(7,407,453)	(5,454,805)	(411,224)	(45,645,349)
Net change in total pension liability	(25,252,890)	(2,705,689)	(676,651)	(7,781,202)	(763,414)	(327,176)	(37,507,022)
Total pension liability-beginning	412,628,621	73,194,499	20,776,522	140,774,616	94,102,258	7,534,696	749,011,212
Total pension liability-ending (a)	387,375,731	70,488,810	20,099,871	132,993,414	93,338,844	7,207,520	711,504,190
Plan fiduciary net position-beginning	227,527,815	41,012,937	12,805,524	81,849,000	54,850,832	5,140,122	423,186,230
Plan fiduciary net position-ending (b)	230,380,198	42,090,931	12,580,238	85,096,788	55,551,570	5,869,339	431,569,064
Plan's net pension liability-ending (a)-(b)	156,995,533	28,397,879	7,519,633	47,896,626	37,787,274	1,338,181	279,935,126
Plan fiduciary net position as a percentage of the TPL	59.47%	59.71%	62.59%	63.99%	59.52%	81.43%	60.66%
Covered employee payroll	\$10,990,135	\$8,395,328	\$2,071,012	\$9,419,585	\$8,057,144	\$532,832	\$39,466,036
Plan's net pension liability as a percentage of covered employee payroll	1,428.5%	338.3%	363.1%	508.5%	469.0%	251.1%	709.3%

Additional Required Disclosures

	General & Sheriffs	Water & Waste	District Library	Mental Health	Road Comm.	Mt. Morris	Total
Total expected remaining service lives							
Active Participants	1,493.3	1,578.3	465.3	1,307.3	1,325.4	101.9	6,271.5
Inactive Participants							0
(a) Total expected remaining service lives	1,493.3	1,578.3	465.3	1,307.3	1,325.4	101.9	6,271.5
Number of Participants							
Active	170	128	42	146	131	10	627.0
Retired	1,005	94	54	321	201	15	1,690.0
Vested	26	7	10	27	8	0	78.0
(b) Total	1,201	229	106	494	340	25	2,395
(c) Average of expected remaining service lives of all active and inactive participants (a)/(b)	1.2	6.9	4.4	2.6	3.9	4.1	2.6
(d1) Difference between expected and actual demographic experience	\$(13,052,891)	\$(2,164,986)	\$(279,694)	\$(5,174,366)	\$(4,029,098)	\$(312,899)	\$(25,013,934)
(d2) Portion allocated to expense (d1)/(c)	(10,877,409)	(313,766)	(63,567)	(1,990,141)	(1,033,102)	(76,317)	(14,354,302)*
(d3) Deferred portion (d1)-(d2)	(2,175,482)	(1,851,220)	(216,127)	(3,184,225)	(2,995,996)	(236,5802)	(10,659,632)
(e1) Changes in assumptions	(10,317,917)	(2,560,324)	(671,811)	(4,875,031)	1,792,422	(154,215)	(16,786,876)
(e2) Portion allocated to expense (e1)/(c)	(8,598,264)	(371,061)	(152,584)	(1,875,012)	459,595	(37,613)	(10,575,040)*
(e3) Deferred portion (e1)-(e2)	(1,719,653)	(2,189,263)	(519,127)	(3,000,019)	1,332,827	(116,602)	(6,211,836)
*Sum of Employer Groups							
(f1) Difference between expected and actual investment experience	(6,339,823)	(1,158,298)	(346,195)	(2,341,775)	(1,528,721)	(161,518)	(11,876,332)
(f2) Portion allocated to expense (f1)/5	(1,267,965)	(231,660)	(69,239)	(468,355)	(305,744)	(32,304)	(2,375,266)
(f3) Deferred portion (f1)-(f2)	(5,071,859)	(926,639)	(276,956)	(1,873,420)	(1,222,977)	(129,214)	(9,501,066)
(g) Total Deferred Portion	\$(8,966,993)	\$(4,967,121)	\$(1,012,210)	\$(8,057,665)	\$(2,886,146)	\$(482,398)	\$(26,372,534)

SCHEDULE OF COUNTY CONTRIBUTIONS

LAST 10 FISCAL YEARS

Year Ended December 31

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Actuarially determined contribution	\$14,967	\$14,695	\$13,826	\$15,060	\$14,354	\$13,028	\$12,728	\$12,096	\$11,950	\$12,997
Actual Contributions in relation to the actuarially										
determined contribution	17,287	17,113	15,414	13,576	14,354	11,942	12,728	12,096	11,950	12,997
Contribution excess (deficiency)	2,320	2,418	1,588	(1,484)	-	(1,086)	-	-	-	-
Covered employee payroll	\$39,466	\$41,687	\$43,724	\$47,628	\$49,737	\$52,237	\$57,795	\$65,511	\$67,721	\$68,341
Actual contributions as a percentage of covered employee payroll										
	43.80%	41.05%	35.25%	28.50%	28.86%	22.86%	22.02%	18.46%	17.65%	19.02%

Notes to Schedule

Actuarially determined contribution rates are calculated as of the December 31, the year prior to the end of the fiscal year in which contributions are reported.

Valuation date: Covered employee payroll is as of December 31 of the current fiscal year.

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry age
Amortization method	Level percentage of payroll for Water, Roads, Mt. Morris and Library; Level dollars for General and Mental Health
Remaining amortization period	25 years, open
Asset valuation method	4 years smoothed market
Inflation	3.00%
Salary increases	3.0%-7.03%, including inflation
Investment rate of return	8.0%, prior, net of pension plan investment expense, including inflation
Mortality Table	RP 2000 Combined Healthy Annuitant Mortality Table

Table1
Projection of Total Contributions*
Assuming 25 Year Open Amortization of UAAL

Year Beg. 1/1	Projected Entry Age AAL	Projected Funding Value of Assets	UAAL	25 Year Open Amortization	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions
2017	\$598,795,161	\$416,923,712	\$181,871,449	\$14,946,786	\$3,100,487	\$18,047,273	\$2,401,863	\$20,449,136
2018	603,303,040	432,621,155	170,681,885	14,027,192	3,017,759	17,044,951	2,301,036	19,345,987
2019	607,119,952	431,727,134	175,392,818	14,414,351	2,947,815	17,362,166	2,225,139	19,587,305
2020	610,391,696	430,306,339	180,085,357	14,799,999	2,869,226	17,669,225	2,160,395	19,829,620
2021	612,943,321	428,182,451	184,760,870	15,184,248	2,761,976	17,946,224	2,080,864	20,027,088
2022	614,651,713	425,239,385	189,412,328	15,566,520	2,640,541	18,207,061	1,998,900	20,205,961
2023	615,461,813	421,431,038	194,030,775	15,946,079	2,517,189	18,463,268	1,923,157	20,386,425
2024	615,340,900	416,732,951	198,607,949	16,322,246	2,409,691	18,731,937	1,842,999	20,574,936
2025	614,130,476	410,989,126	203,141,350	16,694,816	2,241,988	18,936,804	1,730,011	20,666,815
2026	611,456,740	403,831,149	207,625,591	17,063,345	2,051,515	19,114,860	1,593,808	20,708,668
2027	607,227,967	395,184,542	212,043,425	17,426,417	1,869,758	19,296,175	1,473,657	20,769,832
2028	601,434,880	385,054,338	216,380,542	17,782,856	1,683,065	19,465,921	1,352,473	20,818,394
2029	594,026,832	373,405,464	220,621,368	18,131,380	1,509,280	19,640,660	1,237,129	20,877,789
2030	585,024,758	360,275,185	224,749,573	18,470,650	1,337,759	19,808,409	1,119,375	20,927,784
2031	574,398,928	345,649,169	228,749,759	18,799,398	1,151,653	19,951,051	985,125	20,936,176
2032	562,031,759	329,425,094	232,606,665	19,116,371	985,608	20,101,979	866,735	20,968,714
2033	548,138,752	311,841,898	236,296,854	19,419,643	856,321	20,275,964	771,354	21,047,318
2034	533,040,419	293,242,480	239,797,939	19,707,373	741,696	20,449,069	685,850	21,134,919

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

Year Beg. 1/1	Projected Entry Age AAL	Projected Funding Value of Assets	UAAL	25 Year Open Amortization	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions
2035	\$516,817,594	\$273,719,680	\$243,097,914	\$19,978,576	\$628,003	\$20,606,579	\$599,083	\$21,205,662
2036	499,528,842	253,344,401	246,184,441	20,232,237	533,616	20,765,853	521,213	21,287,066
2037	481,351,778	232,307,780	249,043,998	20,467,244	452,192	20,919,436	456,782	21,376,218
2038	462,442,594	210,776,498	251,666,096	20,682,737	380,356	21,063,093	395,052	21,458,145
2039	442,944,618	188,903,379	254,041,239	20,877,934	309,065	21,186,999	334,040	21,521,039
2040	422,866,307	166,700,054	256,166,253	21,052,575	243,004	21,295,579	274,131	21,569,710
2041	402,294,934	144,259,612	258,035,322	21,206,181	177,189	21,383,370	225,661	21,609,031
2042	381,394,740	121,753,563	259,641,177	21,338,155	135,641	21,473,796	195,770	21,669,566
2043	360,472,209	99,496,405	260,975,804	21,447,839	96,753	21,544,592	161,394	21,705,986
2044	339,541,595	77,499,269	262,042,326	21,535,489	60,674	21,596,163	133,123	21,729,286
2045	318,722,992	55,882,165	262,840,827	21,601,113	45,897	21,647,010	118,372	21,765,382
2046	298,266,099	34,896,097	263,370,002	21,644,602	35,790	21,680,392	89,872	21,770,264
2047	278,159,594	14,521,810	263,637,784	21,666,609	32,365	21,698,974	74,658	21,773,632
2048	258,618,977	-	258,618,977	21,254,147	26,230	21,280,377	69,522	21,349,899
2049	239,717,720	-	239,717,720	19,700,781	32,694	19,733,475	47,433	19,780,908
2050	221,483,220	-	221,483,220	18,202,210	26,320	18,228,530	39,150	18,267,680
2051	203,932,484	-	203,932,484	16,759,834	21,039	16,780,873	24,956	16,805,829
2052	187,039,374	-	187,039,374	15,371,503	15,514	15,387,017	18,883	15,405,900
2053	170,902,536	-	170,902,536	14,045,325	12,042	14,057,367	9,356	14,066,723
2054	155,491,861	-	155,491,861	12,778,826	7,177	12,786,003	2,182	12,788,185

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

Year Beg. 1/1	Projected Entry Age AAL	Projected Funding Value of Assets	UAAL	25 Year Open Amortization	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions
2055	\$140,845,658	\$-	\$140,845,658	\$11,575,154	\$3,512	\$11,578,666	\$956	\$11,579,622
2056	127,020,448	-	127,020,448	10,438,953	1,114	10,440,067	118	10,440,185
2057	114,027,222	-	114,027,222	9,371,127	-	9,371,127	-	9,371,127
2058	101,879,015	-	101,879,015	8,372,748	-	8,372,748	-	8,372,748
2059	90,579,134	-	90,579,134	7,444,087	-	7,444,087	-	7,444,087
2060	80,121,756	-	80,121,756	6,584,666	-	6,584,666	-	6,584,666
2061	70,496,089	-	70,496,089	5,793,598	-	5,793,598	-	5,793,598
2062	61,685,915	-	61,685,915	5,069,549	-	5,069,549	-	5,069,549
2063	53,669,759	-	53,669,759	4,410,755	-	4,410,755	-	4,410,755
2064	46,422,138	-	46,422,138	3,815,122	-	3,815,122	-	3,815,122
2065	39,912,863	-	39,912,863	3,280,169	-	3,280,169	-	3,280,169
2066	34,106,601	-	34,106,601	2,802,991	-	2,802,991	-	2,802,991
2067	29,231,343	-	29,231,343	2,402,327	-	2,402,327	-	2,402,327
2068	24,686,402	-	24,686,402	2,028,809	-	2,028,809	-	2,028,809
2069	20,715,151	-	20,715,151	1,702,438	-	1,702,438	-	1,702,438
2070	17,273,435	-	17,273,435	1,419,587	-	1,419,587	-	1,419,587
2071	14,313,861	-	14,313,861	1,176,360	-	1,176,360	-	1,176,360
2072	11,789,193	-	11,789,193	968,874	-	968,874	-	968,874
2073	9,652,545	-	9,652,545	793,277	-	793,277	-	793,277
2074	7,858,079	-	7,858,079	645,802	-	645,802	-	645,802

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

Year Beg. 1/1	Projected Entry Age AAL	Projected Funding Value of Assets	UAAL	25 Year Open Amortization	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions
2075	\$6,362,555	\$-	\$6,362,555	\$522,895	\$-	\$522,895	\$ -	\$522,895
2076	5,125,052	-	5,125,052	421,193	-	421,193	-	421,193
2077	4,107,752	-	4,107,752	337,588	-	337,588	-	337,588
2078	3,276,391	-	3,276,391	269,264	-	269,264	-	269,264
2079	2,600,712	-	2,600,712	213,735	-	213,735	-	213,735
2080	2,054,218	-	2,054,218	168,822	-	168,822	-	168,822
2081	1,614,162	-	1,614,162	132,657	-	132,657	-	132,657
2082	1,261,439	-	1,261,439	103,669	-	103,669	-	103,669
2083	980,049	-	980,049	80,544	-	80,544	-	80,544
2084	756,651	-	756,651	62,184	-	62,184	-	62,184
2085	580,279	-	580,279	47,689	-	47,689	-	47,689
2086	441,911	-	441,911	36,318	-	36,318	-	36,318
2087	334,050	-	334,050	27,453	-	27,453	-	27,453
2088	250,611	-	250,611	20,596	-	20,596	-	20,596
2089	186,565	-	186,565	15,333	-	15,333	-	15,333
2090	137,853	-	137,853	11,329	-	11,329	-	11,329
2091	101,120	-	101,120	8,310	-	8,310	-	8,310
2092	73,651	-	73,651	6,053	-	6,053	-	6,053
2093	53,291	-	53,291	4,380	-	4,380	-	4,380
2094	38,319	-	38,319	3,149	-	3,149	-	3,149

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

Year Beg. 1/1	Projected Entry Age AAL	Projected Funding Value of Assets	UAAL	25 Year Open Amortization	Projected Employer Normal Cost	Employer Contribution	Employee Contribution	Total Contributions
2095	\$27,412	\$ -	\$27,412	\$2,253	\$ -	\$2,253	\$ -	\$2,253
2096	19,506	-	19,506	1,603	-	1,603	-	1,603
2097	13,813	-	13,813	1,135	-	1,135	-	1,135
2098	9,732	-	9,732	800	-	800	-	800
2099	6,829	-	6,829	561	-	561	-	561
2100	4,759	-	4,759	391	-	391	-	391
2101	3,296	-	3,296	271	-	271	-	271
2102	2,260	-	2,260	186	-	186	-	186
2103	1,535	-	1,535	126	-	126	-	126
2104	1,033	-	1,033	85	-	85	-	85
2105	681	-	681	56	-	56	-	56
2106	445	-	445	37	-	37	-	37
2107	288	-	288	24	-	24	-	24
2108	182	-	182	15	-	15	-	15
2109	113	-	113	9	-	9	-	9
2110	66	-	66	5	-	5	-	5
2111	39	-	39	3	-	3	-	3
2112	24	-	24	2	-	2	-	2
2113	13	-	13	1	-	1	-	1
2114	8	-	8	1	-	1	-	1
2115	4	-	4	-	-	-	-	-
2116	-	-	-	-	-	-	-	-

*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. 1/1	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)
2017	\$431,569,064	\$20,449,136	\$(48,219,297)	\$(401,572)	\$29,223,824	\$432,621,155
2018	432,621,155	19,345,987	(49,061,963)	(407,214)	29,229,169	431,727,134
2019	431,727,134	19,587,305	(49,746,097)	(412,893)	29,150,890	430,306,339
2020	430,306,339	19,829,620	(50,564,842)	(419,688)	29,031,022	428,182,451
2021	428,182,451	20,027,088	(51,403,184)	(426,646)	28,859,676	425,239,385
2022	425,239,385	20,205,961	(52,212,313)	(433,362)	28,631,367	421,431,038
2023	421,431,038	20,386,425	(52,988,418)	(439,804)	28,343,710	416,732,951
2024	416,732,951	20,574,936	(53,862,306)	(447,057)	27,990,602	410,989,126
2025	410,989,126	20,666,815	(54,923,238)	(455,863)	27,554,309	403,831,149
2026	403,831,149	20,708,668	(55,911,067)	(464,062)	27,019,854	395,184,542
2027	395,184,542	20,769,832	(56,813,375)	(471,551)	26,384,890	385,054,338
2028	385,054,338	20,818,394	(57,637,278)	(478,389)	25,648,399	373,405,464
2029	373,405,464	20,877,789	(58,334,350)	(484,175)	24,810,457	360,275,185
2030	360,275,185	20,927,784	(58,936,465)	(489,173)	23,871,838	345,649,169
2031	345,649,169	20,936,176	(59,495,040)	(493,809)	22,828,598	329,425,094
2032	329,425,094	20,968,714	(59,741,413)	(495,854)	21,685,357	311,841,898
2033	311,841,898	21,047,318	(59,613,733)	(494,794)	20,461,791	293,242,480
2034	293,242,480	21,134,919	(59,337,848)	(492,504)	19,172,633	273,719,680

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

Year Beg. 1/1	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)
2035	\$273,719,680	\$21,205,662	\$(58,915,366)	\$(488,998)	\$17,823,423	\$253,344,401
2036	253,344,401	21,287,066	(58,263,124)	(483,584)	16,423,021	232,307,780
2037	232,307,780	21,376,218	(57,414,486)	(476,540)	14,983,526	210,776,498
2038	210,776,498	21,458,145	(56,379,063)	(467,946)	13,515,745	188,903,379
2039	188,903,379	21,521,039	(55,290,688)	(458,913)	12,025,237	166,700,054
2040	166,700,054	21,569,710	(54,076,858)	(448,838)	10,515,544	144,259,612
2041	144,259,612	21,609,031	(52,673,505)	(437,190)	8,995,615	121,753,563
2042	121,753,563	21,669,566	(50,985,428)	(423,179)	7,481,883	99,496,405
2043	99,496,405	21,705,986	(49,279,463)	(409,020)	5,985,361	77,499,269
2044	77,499,269	21,729,286	(47,462,931)	(393,942)	4,510,483	55,882,165
2045	55,882,165	21,765,382	(45,444,060)	(377,186)	3,069,796	34,896,097
2046	34,896,097	21,770,264	(43,455,011)	(360,677)	1,671,137	14,521,810
2047	14,521,810	21,773,632	(41,300,287)	(342,792)	321,096	-
2048	-	21,349,899	(39,124,664)	(324,735)	-	-
2049	-	19,780,908	(36,967,024)	(306,826)	-	-
2050	-	18,267,680	(34,845,655)	(289,219)	-	-
2051	-	16,805,829	(32,798,528)	(272,228)	-	-
2052	-	15,405,900	(30,713,111)	(254,919)	-	-
2053	-	14,066,723	(28,715,275)	(238,337)	-	-
2054	-	12,788,185	(26,737,123)	(221,918)	-	-

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

Year Beg. 1/1	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)
2055	\$ -	\$11,579,622	\$(24,770,099)	\$(205,592)	\$ -	\$ -
2056	-	10,440,185	(22,858,169)	(189,723)	-	-
2057	-	9,371,127	(21,000,366)	(174,303)	-	-
2058	-	8,372,748	(19,206,652)	(159,415)	-	-
2059	-	7,444,087	(17,485,083)	(145,126)	-	-
2060	-	6,584,666	(15,840,072)	(131,473)	-	-
2061	-	5,793,598	(14,276,219)	(118,493)	-	-
2062	-	5,069,549	(12,797,497)	(106,219)	-	-
2063	-	4,410,755	(11,406,198)	(94,671)	-	-
2064	-	3,815,122	(10,104,979)	(83,871)	-	-
2065	-	3,280,169	(8,896,700)	(73,843)	-	-
2066	-	2,802,991	(7,782,471)	(64,595)	-	-
2067	-	2,402,327	(6,762,508)	(56,129)	-	-
2068	-	2,028,809	(5,836,184)	(48,440)	-	-
2069	-	1,702,438	(5,001,579)	(41,513)	-	-
2070	-	1,419,587	(4,255,751)	(35,323)	-	-
2071	-	1,176,360	(3,594,748)	(29,836)	-	-
2072	-	968,874	(3,014,639)	(25,022)	-	-
2073	-	793,277	(2,510,462)	(20,837)	-	-
2074	-	645,802	(2,076,145)	(17,232)	-	-

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

Year Beg. 1/1	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)
2075	\$ -	\$522,895	\$(1,705,840)	\$(14,158)	\$-	\$-
2076	-	421,193	(1,393,232)	(11,564)	-	-
2077	-	337,588	(1,131,717)	(9,393)	-	-
2078	-	269,264	(914,631)	(7,591)	-	-
2079	-	213,735	(735,808)	(6,107)	-	-
2080	-	168,822	(589,378)	(4,892)	-	-
2081	-	132,657	(469,955)	(3,901)	-	-
2082	-	103,669	(372,992)	(3,096)	-	-
2083	-	80,544	(294,578)	(2,445)	-	-
2084	-	62,184	(231,350)	(1,920)	-	-
2085	-	47,689	(180,567)	(1,499)	-	-
2086	-	36,318	(140,007)	(1,162)	-	-
2087	-	27,453	(107,801)	(895)	-	-
2088	-	20,596	(82,345)	(683)	-	-
2089	-	15,333	(62,363)	(518)	-	-
2090	-	11,329	(46,839)	(389)	-	-
2091	-	8,310	(34,907)	(290)	-	-
2092	-	6,053	(25,803)	(214)	-	-
2093	-	4,380	(18,912)	(157)	-	-
2094	-	3,149	(13,757)	(114)	-	-

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

Year Beg. 1/1	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)
2095	\$ -	\$2,253	\$(9,949)	\$(83)	\$ -	\$ -
2096	-	1,603	(7,140)	(59)	-	-
2097	-	1,135	(5,120)	(42)	-	-
2098	-	800	(3,642)	(30)	-	-
2099	-	561	(2,577)	(21)	-	-
2100	-	391	(1,823)	(15)	-	-
2101	-	271	(1,282)	(11)	-	-
2102	-	186	(895)	(7)	-	-
2103	-	126	(621)	(5)	-	-
2104	-	85	(427)	(4)	-	-
2105	-	56	(288)	(2)	-	-
2106	-	37	(193)	(2)	-	-
2107	-	24	(127)	(1)	-	-
2108	-	15	(83)	(1)	-	-
2109	-	9	(51)	-	-	-
2110	-	5	(31)	-	-	-
2111	-	3	(20)	-	-	-
2112	-	2	(12)	-	-	-
2113	-	1	(7)	-	-	-
2114	-	1	(4)	-	-	-
2115	-	-	(2)	-	-	-
2116	-	-	-	-	-	-

*From Table 1.

**Administrative expense was assumed to be 0.83% of pension payroll.

***Long term expected rate of return on pension plan investments was 7.00%.

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	\$431,569,064	\$48,219,297	\$48,219,297	\$ -	\$45,064,764	\$ -	\$45,459,927
2	432,621,155	49,061,963	49,061,963	-	42,852,619	-	43,607,444
3	431,727,134	49,746,097	49,746,097	-	40,607,633	-	41,685,266
4	430,306,339	50,564,842	50,564,842	-	38,575,676	-	39,946,623
5	428,182,451	51,403,184	51,403,184	-	36,649,760	-	38,285,057
6	425,239,385	52,212,313	52,212,313	-	34,791,269	-	36,662,330
7	421,431,038	52,988,418	52,988,418	-	32,998,524	-	35,078,090
8	416,732,951	53,862,306	53,862,306	-	31,348,352	-	33,616,135
9	410,989,126	54,923,238	54,923,238	-	29,874,602	-	32,316,687
10	403,831,149	55,911,067	55,911,067	-	28,422,351	-	31,015,324
11	395,184,542	56,813,375	56,813,375	-	26,991,625	-	29,712,349
12	385,054,338	57,637,278	57,637,278	-	25,591,641	-	28,418,276
13	373,405,464	58,334,350	58,334,350	-	24,206,681	-	27,116,053
14	360,275,185	58,936,465	58,936,465	-	22,856,577	-	25,828,195
15	345,649,169	59,495,040	59,495,040	-	21,563,740	-	24,580,945
16	329,425,094	59,741,413	59,741,413	-	20,236,484	-	23,270,256
17	311,841,898	59,613,733	59,613,733	-	18,872,181	-	21,891,718
18	293,242,480	59,337,848	59,337,848	-	17,555,928	-	20,543,440
19	273,719,680	58,915,366	58,915,366	-	16,290,590	-	19,229,935
20	253,344,401	58,263,124	58,263,124	-	15,056,298	-	17,928,785
21	232,307,780	57,414,486	57,414,486	-	13,866,350	-	16,656,603
22	210,776,498	56,379,063	56,379,063	-	12,725,497	-	15,420,223
23	188,903,379	55,290,688	55,290,688	-	11,663,398	-	14,257,148
24	166,700,054	54,076,858	54,076,858	-	10,661,070	-	13,146,192

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)
25	\$144,259,612	\$52,673,505	\$52,673,505	\$ -	\$9,705,050	\$-	\$12,072,260
26	121,753,563	50,985,428	50,985,428	-	8,779,461	-	11,016,669
27	99,496,405	49,279,463	49,279,463	-	7,930,562	-	10,038,713
28	77,499,269	47,462,931	47,462,931	-	7,138,530	-	9,115,374
29	55,882,165	45,444,060	45,444,060	-	6,387,745	-	8,228,201
30	34,896,097	43,455,011	34,896,097	8,558,914	4,584,200	2,869,456	7,417,807
31	14,521,810	41,300,287	14,521,810	26,778,477	1,782,886	8,656,577	6,646,554
32	-	39,124,664	-	39,124,664	-	12,195,239	5,936,110
33	-	36,967,024	-	36,967,024	-	11,110,499	5,287,784
34	-	34,845,655	-	34,845,655	-	10,098,272	4,699,111
35	-	32,798,528	-	32,798,528	-	9,164,993	4,169,935
36	-	30,713,111	-	30,713,111	-	8,275,247	3,681,346
37	-	28,715,275	-	28,715,275	-	7,460,184	3,244,917
38	-	26,737,123	-	26,737,123	-	6,697,775	2,848,480
39	-	24,770,099	-	24,770,099	-	5,983,055	2,487,907
40	-	22,858,169	-	22,858,169	-	5,323,731	2,164,490
41	-	21,000,366	-	21,000,366	-	4,716,077	1,874,774
42	-	19,206,652	-	19,206,652	-	4,158,963	1,616,522
43	-	17,485,083	-	17,485,083	-	3,650,736	1,387,412
44	-	15,840,072	-	15,840,072	-	3,188,961	1,184,957

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)
45	\$ -	\$14,276,219	\$ -	\$14,276,219	\$ -	\$2,771,307	\$1,006,854
46	-	12,797,497	-	12,797,497	-	2,395,388	850,915
47	-	11,406,198	-	11,406,198	-	2,058,596	715,007
48	-	10,104,979	-	10,104,979	-	1,758,511	597,190
49	-	8,896,700	-	8,896,700	-	1,492,856	495,694
50	-	7,782,471	-	7,782,471	-	1,259,174	408,799
51	-	6,762,508	-	6,762,508	-	1,055,007	334,895
52	-	5,836,184	-	5,836,184	-	877,922	272,482
53	-	5,001,579	-	5,001,579	-	725,460	220,152
54	-	4,255,751	-	4,255,751	-	595,199	176,604
55	-	3,594,748	-	3,594,748	-	484,768	140,637
56	-	3,014,639	-	3,014,639	-	391,994	111,192
57	-	2,510,462	-	2,510,462	-	314,759	87,297
58	-	2,076,145	-	2,076,145	-	250,993	68,063
59	-	1,705,840	-	1,705,840	-	198,848	52,723
60	-	1,393,232	-	1,393,232	-	156,598	40,597
61	-	1,131,717	-	1,131,717	-	122,653	31,090
62	-	914,631	-	914,631	-	95,580	23,688
63	-	735,808	-	735,808	-	74,142	17,966
64	-	589,378	-	589,378	-	57,263	13,567

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)
65	\$ -	\$469,955	\$ -	\$469,955	\$ -	\$44,027	\$10,199
66	-	372,992	-	372,992	-	33,693	7,632
67	-	294,578	-	294,578	-	25,658	5,682
68	-	231,350	-	231,350	-	19,430	4,207
69	-	180,567	-	180,567	-	14,622	3,096
70	-	140,007	-	140,007	-	10,932	2,263
71	-	107,801	-	107,801	-	8,116	1,643
72	-	82,345	-	82,345	-	5,978	1,183
73	-	62,363	-	62,363	-	4,365	845
74	-	46,839	-	46,839	-	3,161	598
75	-	34,907	-	34,907	-	2,272	420
76	-	25,803	-	25,803	-	1,619	293
77	-	18,912	-	18,912	-	1,144	202
78	-	13,757	-	13,757	-	803	139
79	-	9,949	-	9,949	-	560	95
80	-	7,140	-	7,140	-	387	64
81	-	5,120	-	5,120	-	268	43
82	-	3,642	-	3,642	-	184	29
83	-	2,577	-	2,577	-	125	19
84	-	1,823	-	1,823	-	85	13

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)
85	\$ -	\$1,282	\$ -	\$1,282	\$ -	\$58	\$9
86	-	895	-	895	-	39	6
87	-	621	-	621	-	26	4
88	-	427	-	427	-	17	2
89	-	288	-	288	-	11	2
90	-	193	-	193	-	7	1
91	-	127	-	127	-	5	1
92	-	83	-	83	-	3	-
93	-	51	-	51	-	2	-
94	-	31	-	31	-	1	-
95	-	20	-	20	-	1	-
96	-	12	-	12	-	-	-
97	-	7	-	7	-	-	-
98	-	4	-	4	-	-	-
99	-	2	-	2	-	-	-
100	-	-	-	-	-	-	-
					\$665,632,044	\$120,864,382	\$786,496,426

* 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).

***3.71% S&P Municipal Bond 20 Year High Grade Index as of December 30, 2016 (YTW).

****6.07% 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).