

September 26, 2017

#### **VIA EMAIL**

David W. Wright, CPA Director of Finance City of Bartow P.O. Box 1069 Bartow, FL 33831

Re: City of Bartow General Employees' Retirement Plan

Senate Bill 534 (Section 112.664, Florida Statutes) Compliance

Dear David:

Please find enclosed the annual disclosures that satisfy the October 1, 2016 financial reporting requirements made under Section 112.664.

Our office will submit this information electronically to the Department of Management Services. However, it is important for you to be aware that this report must also be made available on the Plan or Plan Sponsor's website, if such website exists. A deadline for this website publication is not made clear in the law.

In addition to the enclosed report, the Plan or Plan Sponsor's website must provide a link to the Division of Retirement's Actuarial Summary Fact Sheet for the Plan, and also report the previous five years' assumed and actual rates of return, along with their respective asset allocations. The Board should contact its Investment Consultant for this information.

If there are any questions, concerns, or comments about any of the items contained in this report, please feel free to contact me.

Respectfully submitted,

Foster & Foster, Inc.

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By:

Patrick T. Donlan, EA, ASA, MAAA

Enrolled Actuary #17-6595

PTD/lke Enclosures

cc via email: H. Lee Dehner, Board Attorney

### CITY OF BARTOW GENERAL EMPLOYEES' RETIREMENT PLAN

### SECTION 112.664, FLORIDA STATUTES COMPLIANCE

With respect to the reporting standards for defined benefit retirement plans or systems contained in Section 112.664(1), F.S., the actuarial disclosures required under this section were prepared and completed by me or under my direct supervision and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, meet the requirements of Section 112.664(1), Florida Statutes, and Rule 60T-1.0035, Florida Administrative Code.

By:

Date: 9/26/2017

Patrick T. Donlan, EA, ASA, MAAA Enrolled Actuary #17-6595



When reviewing the following schedules, please note the following:

- 1) The purpose of producing this report is solely to satisfy the requirements set forth by Section 112.664, Florida Statutes, and is mandatory for every Florida public pension fund, excluding the Florida Retirement System (FRS).
- 2) None of the schedules shown have any impact on the funding requirements of the Plan. These schedules are for statutory compliance purposes only.
- 3) In the schedules that follow, the columns labeled "ACTUAL" represent the final recorded GASB 67/68 results. The columns labeled "HYPOTHETICAL" illustrate what the results would have been if different assumptions were used.
- 4) It is our opinion that the Plan's actual assumptions utilized in the October 1, 2016 Actuarial Valuation Report, as adopted by the Board of Trustees, are reasonable individually and in the aggregate, and represent our best estimate of future Plan experience.
- 5) The "Number of Years Expected Benefit Payments Sustained" calculated in Section II: Asset Sustainability should <u>not</u> be interpreted as the number of years the Plan has left until it is insolvent. This calculation is required by 112.664, Florida Statutes, but the numeric result is irrelevant, since in its calculation we are to assume there will be no further contributions to the Fund. As long as the Actuarially Determined Contribution is made each year the Plan will never become insolvent.

# GASB 67: SCHEDULE OF CHANGES IN NET PENSION LIABILITY FISCAL YEAR SEPTEMBER 30, 2016

	ACTUAL	HYPOTHETICAL		
	7.75% RP-2000 Generational	5.75% RP-2000 Generational	9.75% RP-2000 Generational	
Total Pension Liability				
Service Cost	594,932	964,466	407,674	
Interest	2,285,926	2,214,658	2,380,318	
Change in Funding Standard Account	(33,336)	(33,336)	(33,336)	
Changes of Benefit Terms Differences Between Expected and Actual	-	-	-	
Experience	107,208	183,737	(37,353)	
Changes of Assumptions	794,635	294,724	(38,643)	
Benefit Payments, Including Refunds of				
Employee Contributions	(2,127,216)	(2,127,216)	(2,127,216)	
Net Change in Total Pension Liability	1,622,149	1,497,033	551,444	
Total Pension Liability - Beginning	29,964,494	38,614,936	25,069,450	
Total Pension Liability - Ending (a)	\$ 31,586,643	\$ 40,111,969	\$ 25,620,894	
Plan Fiduciary Net Position				
Contributions - Employer	1,305,948	1,305,948	1,305,948	
Contributions - Employee	301,356	301,356	301,356	
Net Investment Income	2,102,235	2,102,235	2,102,235	
Benefit Payments, Including Refunds of	(2.127.216)	(2.127.216)	(2.127.216)	
Employee Contributions	(2,127,216)	(2,127,216)	(2,127,216)	
Administrative Expenses	(56,745)	(56,745)	(56,745)	
Net Change in Plan Fiduciary Net Position	1,525,578	1,525,578	1,525,578	
Plan Fiduciary Net Position - Beginning	21,469,718	21,469,718	21,469,718	
Plan Fiduciary Net Position - Ending (b)	\$ 22,995,296	\$ 22,995,296	\$ 22,995,296	
Net Pension Liability - Ending (a) - (b)	\$ 8,591,347	\$ 17,116,673	\$ 2,625,598	

# GASB 68: PENSION EXPENSE FISCAL YEAR SEPTEMBER 30, 2016

	 ACTUAL	-	НҮРОТІ	HETICAL	
	 7.75%		5.75%		9.75%
Pension Expense	\$ 969,014	\$	1,496,283	\$	606,286

Table 1 Plan Assumptions: 7.75% and RP-2000 Generational Mortality

Fiscal Year Beginning 10/1	Projected Beginning Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments*	Projected Administrative Expense	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2016	22,995,296	=	1,976,198	-	1,705,558	22,724,656
2017	22,724,656	-	1,524,998	-	1,702,067	22,901,725
2018	22,901,725	-	1,655,290	-	1,710,741	22,957,176
2019	22,957,176	-	1,751,301	=	1,711,318	22,917,193
2020	22,917,193	-	1,856,664	-	1,704,137	22,764,666
2021	22,764,666	-	1,939,130	-	1,689,120	22,514,656
2022	22,514,656	-	2,035,844	-	1,665,997	22,144,809
2023	22,144,809	-	2,097,537	-	1,634,943	21,682,215
2024	21,682,215	-	2,159,952	-	1,596,674	21,118,937
2025	21,118,937	-	2,230,859	-	1,550,272	20,438,350
2026	20,438,350	-	2,260,978	-	1,496,359	19,673,731
2027	19,673,731	-	2,298,634	-	1,435,642	18,810,739
2028	18,810,739	-	2,310,391	-	1,368,305	17,868,653
2029	17,868,653	-	2,319,333	-	1,294,946	16,844,266
2030	16,844,266	-	2,360,960	-	1,213,943	15,697,249
2031	15,697,249	-	2,346,812	-	1,125,598	14,476,035
2032	14,476,035	-	2,335,575	-	1,031,389	13,171,849
2033	13,171,849	-	2,306,029	-	931,460	11,797,280
2034	11,797,280	-	2,280,871	-	825,905	10,342,314
2035	10,342,314	-	2,259,055	-	713,991	8,797,250
2036	8,797,250	-	2,213,555	-	596,012	7,179,707
2037	7,179,707	-	2,155,027	-	472,920	5,497,600
2038	5,497,600	-	2,094,424	-	344,905	3,748,081
2039	3,748,081	-	2,043,883	-	211,276	1,915,474
2040	1,915,474	-	1,986,958	-	-	-

<sup>\*</sup>All DROP Balances paid in 2016.

Number of Years Expected Benefit Payments Sustained: 24.96

This projection assumes no further contributions, assumes no further benefit accruals, and assumes Market Value of Assets earn 7.75% interest. It is important to note that as long as the Actuarially Determined Contribution is made each year, the Plan will never become insolvent. Furthermore, State and local laws mandate that the Actuarially Determined Contribution be made each year.

 $Table\ 2$  Hypothetical Assumptions: 5.75% and RP-2000 Generational Mortality

Fiscal Year Beginning 10/1	Projected Beginning Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments*	Projected Administrative Expense	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2016	22,995,296	-	1,976,198	-	1,265,414	22,284,512
2017	22,284,512	-	1,524,998	-	1,237,516	21,997,030
2018	21,997,030	-	1,655,290	-	1,217,240	21,558,980
2019	21,558,980	-	1,751,301	-	1,189,291	20,996,970
2020	20,996,970	-	1,856,664	-	1,153,947	20,294,253
2021	20,294,253	-	1,939,130	-	1,111,170	19,466,293
2022	19,466,293	-	2,035,844	-	1,060,781	18,491,230
2023	18,491,230	-	2,097,537	-	1,002,942	17,396,635
2024	17,396,635	-	2,159,952	-	938,208	16,174,891
2025	16,174,891	-	2,230,859	-	865,919	14,809,951
2026	14,809,951	-	2,260,978	-	786,569	13,335,542
2027	13,335,542	-	2,298,634	-	700,708	11,737,616
2028	11,737,616	-	2,310,391	-	608,489	10,035,714
2029	10,035,714	-	2,319,333	-	510,373	8,226,754
2030	8,226,754	-	2,360,960	-	405,161	6,270,955
2031	6,270,955	-	2,346,812	-	293,109	4,217,252
2032	4,217,252	-	2,335,575	-	175,344	2,057,021
2033	2,057,021	-	2,306,029	-	-	-

<sup>\*</sup>All DROP Balances paid in 2016.

Number of Years Expected Benefit Payments Sustained: 17.89

This projection assumes no further contributions, assumes no further benefit accruals, and assumes Market Value of Assets earn 5.75% interest. It is important to note that as long as the Actuarially Determined Contribution is made each year, the Plan will never become insolvent. Furthermore, State and local laws mandate that the Actuarially Determined Contribution be made each year.

 $\label{thm:continuous} Table~3$  Hypothetical Assumptions: 9.75% and RP-2000 Generational Mortality

2016         22,995,296         -         1,976,198         -         2,145,702         23,164,302           2017         23,164,800         -         1,524,998         -         2,184,224         23,824,026           2018         23,824,026         -         1,655,290         -         2,242,147         24,410,22           2019         24,410,883         -         1,751,301         -         2,294,685         24,954,24           2020         24,954,267         -         1,856,664         -         2,342,529         25,440,132           2021         25,840,132         -         1,939,130         -         2,385,880         25,886,382           2022         25,886,882         -         2,035,844         -         2,424,724         26,673,22           2023         26,275,762         -         2,097,537         -         2,459,632         26,637,857           2024         26,637,857         -         2,159,952         -         2,491,893         26,969,79           2025         26,969,798         -         2,230,859         -         2,520,801         27,254,6           2027         27,546,364         -         2,298,634         -         2,573,712         <	2 1 1 5 7 0 2	Expense	Payments*	Contributions	Fiduciary Net Position	Fiscal Year Beginning 10/1
2017         23,164,800         -         1,524,998         -         2,184,224         23,824,026           2018         23,824,026         -         1,655,290         -         2,242,147         24,410,83           2019         24,410,883         -         1,751,301         -         2,294,685         24,954,202           2020         24,954,267         -         1,856,664         -         2,342,529         25,440,132           2021         25,440,132         -         1,939,130         -         2,385,880         25,886,882           2022         25,886,882         -         2,097,537         -         2,459,632         26,637,5762           2023         26,275,762         -         2,097,537         -         2,459,632         26,637,32           2024         26,637,857         -         2,159,952         -         2,491,893         26,969,969           2025         26,969,798         -         2,230,859         -         2,547,602         27,546,202           2027         27,546,364         -         2,298,634         -         2,537,712         27,821,422           2028         27,821,442         -         2,310,391         -         2,657,737	2.145.702		1,976,198	_	22.995.296	2016
2018         23,824,026         -         1,655,290         -         2,242,147         24,410,82           2019         24,410,883         -         1,751,301         -         2,294,685         24,954,267           2020         24,954,267         -         1,856,664         -         2,342,529         25,440,120           2021         25,440,132         -         1,939,130         -         2,385,880         25,886,882           2022         25,886,882         -         2,035,844         -         2,424,724         26,275,762           2023         26,275,762         -         2,097,537         -         2,459,632         26,637,57           2024         26,637,857         -         2,159,952         -         2,491,893         26,969,969,2025           2026         27,259,740         -         2,260,978         -         2,520,801         27,259,250,200           2027         27,546,364         -         2,298,634         -         2,573,712         27,846,602           2029         28,111,010         -         2,319,333         -         2,627,756         28,419,402           2030         28,419,433         -         2,360,996         -         2,655,798 </td <td></td> <td></td> <td></td> <td>_</td> <td></td> <td></td>				_		
2019         24,410,883         -         1,751,301         -         2,294,685         24,954,262           2021         25,440,132         -         1,939,130         -         2,385,880         25,886,8           2022         25,886,882         -         2,035,844         -         2,424,724         26,275,762           2023         26,275,762         -         2,097,537         -         2,459,632         26,637,87           2024         26,637,857         -         2,159,952         -         2,491,893         26,969,98           2025         26,969,798         -         2,230,859         -         2,520,801         27,259,740           2026         27,259,740         -         2,260,978         -         2,547,602         27,546,602           2027         27,546,364         -         2,298,634         -         2,573,712         27,821,442           2028         27,821,442         -         2,310,391         -         2,599,959         28,111,0           2029         28,111,010         -         2,319,333         -         2,627,756         28,419,4           2031         28,714,271         -         2,346,812         -         2,655,798 <td< td=""><td></td><td><u>-</u></td><td></td><td>_</td><td></td><td></td></td<>		<u>-</u>		_		
2020         24,954,267         -         1,856,664         -         2,342,529         25,440,1           2021         25,440,132         -         1,939,130         -         2,385,880         25,886,8           2022         25,886,882         -         2,035,844         -         2,424,724         26,275,7           2023         26,275,762         -         2,097,537         -         2,459,632         26,637,857           2024         26,637,857         -         2,159,952         -         2,491,893         26,969,9           2025         26,969,798         -         2,230,859         -         2,520,801         27,259,7           2026         27,259,740         -         2,260,978         -         2,547,602         27,546,60           2027         27,546,364         -         2,298,634         -         2,573,712         27,846,20           2028         27,821,442         -         2,310,391         -         2,599,959         28,111,60           2029         28,111,010         -         2,319,333         -         2,627,756         28,419,4           2031         28,714,271         -         2,346,812         -         2,655,798         28,714		_		_		
2021         25,440,132         -         1,939,130         -         2,385,880         25,886,82           2022         25,886,882         -         2,035,844         -         2,424,724         26,275,22           2023         26,275,762         -         2,097,537         -         2,459,632         26,637,857           2024         26,637,857         -         2,159,952         -         2,491,893         26,696,969,98           2025         26,969,798         -         2,230,859         -         2,520,801         27,259,202           2026         27,259,740         -         2,260,978         -         2,547,602         27,546,62           2027         27,546,364         -         2,298,634         -         2,573,712         27,821,42           2028         27,821,442         -         2,310,391         -         2,599,959         28,111,60           2030         28,419,433         -         2,360,960         -         2,655,798         28,714,22           2031         28,714,271         -         2,346,812         -         2,685,234         29,052,6           2032         29,052,693         -         2,336,519         -         2,718,778		_		-		
2022         25,886,882         -         2,035,844         -         2,424,724         26,275,762           2023         26,275,762         -         2,097,537         -         2,459,632         26,637,3           2024         26,637,857         -         2,159,952         -         2,491,893         26,693,3           2025         26,969,798         -         2,230,859         -         2,520,801         27,259,740           2026         27,259,740         -         2,260,978         -         2,547,602         27,546,364           2027         27,546,364         -         2,298,634         -         2,573,712         27,821,42           2028         27,821,442         -         2,310,391         -         2,599,959         28,111,01           2029         28,111,010         -         2,319,333         -         2,655,798         28,714,22           2030         28,419,433         -         2,360,960         -         2,655,798         28,714,22           2031         28,714,271         -         2,346,812         -         2,685,234         29,052,6           2032         29,052,693         -         2,335,575         -         2,718,778         2		_		-		
2023         26,275,762         -         2,097,537         -         2,459,632         26,637,87           2024         26,637,857         -         2,159,952         -         2,491,893         26,969,798           2025         26,969,798         -         2,230,859         -         2,520,801         27,259,740           2026         27,259,740         -         2,260,978         -         2,547,602         27,546,62           2027         27,546,364         -         2,298,634         -         2,573,712         27,821,42           2028         27,821,442         -         2,310,391         -         2,599,959         28,111,60           2029         28,111,010         -         2,319,333         -         2,627,756         28,419,420           2030         28,419,433         -         2,360,960         -         2,655,798         28,714,220           2031         28,714,271         -         2,346,812         -         2,685,234         29,052,02           2032         29,052,693         -         2,335,755         -         2,718,778         29,435,8           2033         29,435,896         -         2,306,029         -         2,757,581 <t< td=""><td></td><td>_</td><td></td><td>_</td><td></td><td></td></t<>		_		_		
2024         26,637,857         -         2,159,952         -         2,491,893         26,969,998           2025         26,969,798         -         2,230,859         -         2,520,801         27,259,702           2026         27,259,740         -         2,260,978         -         2,547,602         27,546,602           2027         27,546,364         -         2,298,634         -         2,573,712         27,821,4           2028         27,821,442         -         2,310,391         -         2,599,959         28,111,0           2029         28,111,010         -         2,319,333         -         2,627,756         28,419,4           2030         28,419,433         -         2,360,960         -         2,655,798         28,714,2           2031         28,714,271         -         2,346,812         -         2,685,234         29,052,6           2032         29,052,693         -         2,336,299         -         2,757,581         29,887,4           2033         29,435,896         -         2,306,029         -         2,757,581         29,887,4           2034         29,887,448         -         2,280,871         -         2,854,789         31,00		_		_		
2025       26,969,798       -       2,230,859       -       2,520,801       27,259,740         2026       27,259,740       -       2,260,978       -       2,547,602       27,546,62         2027       27,546,364       -       2,298,634       -       2,573,712       27,821,4         2028       27,821,442       -       2,310,391       -       2,599,959       28,111,01         2029       28,111,010       -       2,319,333       -       2,627,756       28,419,4         2030       28,419,433       -       2,360,960       -       2,655,798       28,714,2         2031       28,714,271       -       2,346,812       -       2,685,234       29,052,6         2032       29,052,693       -       2,355,575       -       2,718,778       29,435,8         2033       29,435,896       -       2,306,029       -       2,757,581       29,887,4         2034       29,887,448       -       2,280,871       -       2,802,834       30,409,4         2035       30,409,411       -       2,259,055       -       2,854,789       31,005,         2036       31,005,145       -       2,213,555       -       2,91		_		_		
2026       27,259,740       -       2,260,978       -       2,547,602       27,546,246         2027       27,546,364       -       2,298,634       -       2,573,712       27,821,42         2028       27,821,442       -       2,310,391       -       2,599,959       28,111,010         2029       28,111,010       -       2,319,333       -       2,627,756       28,419,42         2030       28,419,433       -       2,360,960       -       2,655,798       28,714,271         2031       28,714,271       -       2,346,812       -       2,685,234       29,052,693         2032       29,052,693       -       2,335,575       -       2,718,778       29,435,8         2033       29,435,896       -       2,306,029       -       2,757,581       29,887,4         2034       29,887,448       -       2,280,871       -       2,802,834       30,409,4         2035       30,409,411       -       2,259,055       -       2,854,789       31,005,1         2036       31,005,145       -       2,213,555       -       2,915,091       31,706,6         2037       31,706,681       -       2,155,027       -       <		_	· · ·	_		
2027         27,546,364         -         2,298,634         -         2,573,712         27,821,4           2028         27,821,442         -         2,310,391         -         2,599,959         28,111,0           2029         28,111,010         -         2,319,333         -         2,627,756         28,419,4           2030         28,419,433         -         2,360,960         -         2,685,234         29,052,69           2031         28,714,271         -         2,346,812         -         2,685,234         29,052,69           2032         29,052,693         -         2,335,575         -         2,718,778         29,435,89           2033         29,435,896         -         2,306,029         -         2,757,581         29,887,49           2034         29,887,448         -         2,289,871         -         2,802,834         30,409,4           2035         30,409,411         -         2,259,055         -         2,854,789         31,005,1           2036         31,005,145         -         2,213,555         -         2,915,091         31,706,6           2037         31,706,681         -         2,155,027         -         2,986,344         32,537,		_		_		
2028       27,821,442       -       2,310,391       -       2,599,959       28,111,010         2029       28,111,010       -       2,319,333       -       2,627,756       28,419,4         2030       28,419,433       -       2,360,960       -       2,655,798       28,714,2         2031       28,714,271       -       2,346,812       -       2,685,234       29,052,6         2032       29,052,693       -       2,335,575       -       2,718,778       29,435,8         2033       29,435,896       -       2,306,029       -       2,757,581       29,887,4         2034       29,887,448       -       2,280,871       -       2,802,834       30,409,4         2035       30,409,411       -       2,259,055       -       2,854,789       31,005,1         2036       31,005,145       -       2,213,555       -       2,915,091       31,706,6         2037       31,706,681       -       2,155,027       -       2,986,344       32,537,9         2038       32,537,998       -       2,043,883       -       3,167,968       34,638,0         2040       34,638,011       -       1,986,958       -       3,280		_		_		
2029       28,111,010       -       2,319,333       -       2,627,756       28,419,421         2030       28,419,433       -       2,360,960       -       2,655,798       28,714,221         2031       28,714,271       -       2,346,812       -       2,685,234       29,052,6         2032       29,052,693       -       2,335,575       -       2,718,778       29,435,8         2033       29,435,896       -       2,306,029       -       2,757,581       29,887,4         2034       29,887,448       -       2,280,871       -       2,802,834       30,409,4         2035       30,409,411       -       2,259,055       -       2,854,789       31,005,6         2036       31,005,145       -       2,213,555       -       2,915,091       31,706,6         2037       31,706,681       -       2,155,027       -       2,986,344       32,537,9         2038       32,537,998       -       2,043,883       -       3,167,968       34,638,0         2040       34,638,011       -       1,986,958       -       3,280,342       35,931,3         2041       35,931,395       -       1,910,542       -       3,4		_		_		
2030       28,419,433       -       2,360,960       -       2,655,798       28,714,271         2031       28,714,271       -       2,346,812       -       2,685,234       29,052,69         2032       29,052,693       -       2,335,575       -       2,718,778       29,435,89         2033       29,435,896       -       2,306,029       -       2,757,581       29,887,48         2034       29,887,448       -       2,280,871       -       2,802,834       30,409,4         2035       30,409,411       -       2,259,055       -       2,854,789       31,005,1         2036       31,005,145       -       2,213,555       -       2,915,091       31,706,6         2037       31,706,681       -       2,155,027       -       2,986,344       32,537,9         2038       32,537,998       -       2,094,424       -       3,070,352       33,513,9         2039       33,513,926       -       2,043,883       -       3,167,968       34,638,0         2040       34,638,011       -       1,986,958       -       3,280,342       35,931,3         2042       37,431,025       -       1,839,025       -       3,		_		_		
2031       28,714,271       -       2,346,812       -       2,685,234       29,052,693         2032       29,052,693       -       2,335,575       -       2,718,778       29,435,8         2033       29,435,896       -       2,306,029       -       2,757,581       29,887,4         2034       29,887,448       -       2,280,871       -       2,802,834       30,409,4         2035       30,409,411       -       2,259,055       -       2,854,789       31,005,1         2036       31,005,145       -       2,213,555       -       2,915,091       31,706,6         2037       31,706,681       -       2,155,027       -       2,986,344       32,537,9         2038       32,537,998       -       2,043,883       -       3,070,352       33,513,9         2039       33,513,926       -       2,043,883       -       3,167,968       34,638,0         2040       34,638,011       -       1,986,958       -       3,280,342       35,931,3         2041       35,931,395       -       1,839,025       -       3,559,872       39,151,8         2043       39,151,872       -       1,771,173       -       3,730		_		_		
2032       29,052,693       -       2,335,575       -       2,718,778       29,435,8         2033       29,435,896       -       2,306,029       -       2,757,581       29,887,4         2034       29,887,448       -       2,280,871       -       2,802,834       30,409,4         2035       30,409,411       -       2,259,055       -       2,854,789       31,005,1         2036       31,005,145       -       2,213,555       -       2,915,091       31,706,6         2037       31,706,681       -       2,155,027       -       2,986,344       32,537,9         2038       32,537,998       -       2,094,424       -       3,070,352       33,513,9         2039       33,513,926       -       2,043,883       -       3,167,968       34,638,0         2040       34,638,011       -       1,986,958       -       3,280,342       35,931,3         2041       35,931,395       -       1,910,542       -       3,410,172       37,431,0         2042       37,431,025       -       1,839,025       -       3,559,872       39,151,8         2043       39,151,872       -       1,771,173       -       3,730,9		-		-		
2033       29,435,896       -       2,306,029       -       2,757,581       29,887,48         2034       29,887,448       -       2,280,871       -       2,802,834       30,409,49,2035         2035       30,409,411       -       2,259,055       -       2,854,789       31,005,145         2036       31,005,145       -       2,213,555       -       2,915,091       31,706,68         2037       31,706,681       -       2,155,027       -       2,986,344       32,537,9         2038       32,537,998       -       2,094,424       -       3,070,352       33,513,9         2039       33,513,926       -       2,043,883       -       3,167,968       34,638,6         2040       34,638,011       -       1,986,958       -       3,280,342       35,931,3         2041       35,931,395       -       1,910,542       -       3,410,172       37,431,0         2042       37,431,025       -       1,839,025       -       3,559,872       39,151,8         2043       39,151,872       -       1,771,173       -       3,730,963       41,111,6         2044       41,111,662       -       1,699,186       -       <		-		-		
2034       29,887,448       -       2,280,871       -       2,802,834       30,409,4         2035       30,409,411       -       2,259,055       -       2,854,789       31,005,1         2036       31,005,145       -       2,213,555       -       2,915,091       31,706,6         2037       31,706,681       -       2,155,027       -       2,986,344       32,537,9         2038       32,537,998       -       2,094,424       -       3,070,352       33,513,9         2039       33,513,926       -       2,043,883       -       3,167,968       34,638,0         2040       34,638,011       -       1,986,958       -       3,280,342       35,931,3         2041       35,931,395       -       1,910,542       -       3,410,172       37,431,0         2042       37,431,025       -       1,839,025       -       3,559,872       39,151,8         2043       39,151,872       -       1,771,173       -       3,730,963       41,111,6         2044       41,111,662       -       1,699,186       -       3,925,552       43,338,0         2045       43,338,028       -       1,641,974       -       4,145,4		-		-		
2035       30,409,411       -       2,259,055       -       2,854,789       31,005,1         2036       31,005,145       -       2,213,555       -       2,915,091       31,706,6         2037       31,706,681       -       2,155,027       -       2,986,344       32,537,9         2038       32,537,998       -       2,094,424       -       3,070,352       33,513,9         2039       33,513,926       -       2,043,883       -       3,167,968       34,638,6         2040       34,638,011       -       1,986,958       -       3,280,342       35,931,3         2041       35,931,395       -       1,910,542       -       3,410,172       37,431,0         2042       37,431,025       -       1,839,025       -       3,559,872       39,151,8         2043       39,151,872       -       1,771,173       -       3,730,963       41,111,0         2044       41,111,662       -       1,699,186       -       3,925,552       43,338,0         2045       43,338,028       -       1,641,974       -       4,145,411       45,841,4	· · ·	<del>-</del>		-		
2036       31,005,145       -       2,213,555       -       2,915,091       31,706,681         2037       31,706,681       -       2,155,027       -       2,986,344       32,537,9         2038       32,537,998       -       2,094,424       -       3,070,352       33,513,9         2039       33,513,926       -       2,043,883       -       3,167,968       34,638,6         2040       34,638,011       -       1,986,958       -       3,280,342       35,931,3         2041       35,931,395       -       1,910,542       -       3,410,172       37,431,0         2042       37,431,025       -       1,839,025       -       3,559,872       39,151,8         2043       39,151,872       -       1,771,173       -       3,730,963       41,111,6         2044       41,111,662       -       1,699,186       -       3,925,552       43,338,0         2045       43,338,028       -       1,641,974       -       4,145,411       45,841,4		-		-		
2037       31,706,681       -       2,155,027       -       2,986,344       32,537,92         2038       32,537,998       -       2,094,424       -       3,070,352       33,513,92         2039       33,513,926       -       2,043,883       -       3,167,968       34,638,0         2040       34,638,011       -       1,986,958       -       3,280,342       35,931,3         2041       35,931,395       -       1,910,542       -       3,410,172       37,431,0         2042       37,431,025       -       1,839,025       -       3,559,872       39,151,8         2043       39,151,872       -       1,771,173       -       3,730,963       41,111,6         2044       41,111,662       -       1,699,186       -       3,925,552       43,338,0         2045       43,338,028       -       1,641,974       -       4,145,411       45,841,4		-		-		
2038       32,537,998       -       2,094,424       -       3,070,352       33,513,9         2039       33,513,926       -       2,043,883       -       3,167,968       34,638,0         2040       34,638,011       -       1,986,958       -       3,280,342       35,931,3         2041       35,931,395       -       1,910,542       -       3,410,172       37,431,0         2042       37,431,025       -       1,839,025       -       3,559,872       39,151,8         2043       39,151,872       -       1,771,173       -       3,730,963       41,111,6         2044       41,111,662       -       1,699,186       -       3,925,552       43,338,0         2045       43,338,028       -       1,641,974       -       4,145,411       45,841,4		-		-		
2039       33,513,926       -       2,043,883       -       3,167,968       34,638,01         2040       34,638,011       -       1,986,958       -       3,280,342       35,931,3         2041       35,931,395       -       1,910,542       -       3,410,172       37,431,0         2042       37,431,025       -       1,839,025       -       3,559,872       39,151,8         2043       39,151,872       -       1,771,173       -       3,730,963       41,111,6         2044       41,111,662       -       1,699,186       -       3,925,552       43,338,0         2045       43,338,028       -       1,641,974       -       4,145,411       45,841,4		-		-		
2040       34,638,011       -       1,986,958       -       3,280,342       35,931,3         2041       35,931,395       -       1,910,542       -       3,410,172       37,431,0         2042       37,431,025       -       1,839,025       -       3,559,872       39,151,5         2043       39,151,872       -       1,771,173       -       3,730,963       41,111,6         2044       41,111,662       -       1,699,186       -       3,925,552       43,338,0         2045       43,338,028       -       1,641,974       -       4,145,411       45,841,4		-		-		
2041       35,931,395       -       1,910,542       -       3,410,172       37,431,025       37,431,025       -       1,839,025       -       3,559,872       39,151,872       39,151,872       -       1,771,173       -       3,730,963       41,111,62       41,111,662       -       1,699,186       -       3,925,552       43,338,02       43,338,028       -       1,641,974       -       4,145,411       45,841,4		-		-		
2042       37,431,025       -       1,839,025       -       3,559,872       39,151,872         2043       39,151,872       -       1,771,173       -       3,730,963       41,111,62         2044       41,111,662       -       1,699,186       -       3,925,552       43,338,02         2045       43,338,028       -       1,641,974       -       4,145,411       45,841,4		-		-		
2043       39,151,872       -       1,771,173       -       3,730,963       41,111,6         2044       41,111,662       -       1,699,186       -       3,925,552       43,338,0         2045       43,338,028       -       1,641,974       -       4,145,411       45,841,4		-		=		
2044 41,111,662 - 1,699,186 - 3,925,552 43,338,0 2045 43,338,028 - 1,641,974 - 4,145,411 45,841,4		-		=		
2045 43,338,028 - 1,641,974 - 4,145,411 45,841,4		-		-		
		-		=		
		=		-		
	4,393,376	=	1,562,395	-	45,841,465	2046
2047 48,672,446 - 1,477,878 - 4,673,517 51,868,0		=		-		
2048 51,868,085 - 1,394,531 - 4,989,155 55,462,7		-		-		
2049 55,462,709 - 1,314,957 - 5,343,510 59,491,7		-		-		
2050 59,491,262 - 1,230,430 - 5,740,415 64,001,2		-		-		
2051 64,001,247 - 1,150,819 - 6,184,019 69,034,4	· · ·	-		-		
2052 69,034,447 - 1,075,676 - 6,678,419 74,637,1		-		-		
2053 74,637,190 - 995,218 - 7,228,609 80,870,5		-		-		
2054 80,870,581 - 918,852 - 7,840,088 87,791,8		-		-		
2055 87,791,817 - 842,318 - 8,518,639 95,468,5		-		-		
2056 95,468,138 - 769,521 - 9,270,629 103,969,2		-		-		
2057 103,969,246 - 699,661 - 10,102,893 113,372,4	· · ·	-	•	-		
2058 113,372,478 - 632,729 - 11,022,971 123,762,7		-		-		
2059 123,762,720 - 569,364 - 12,039,109 135,232,4		-		-		
2060 135,232,465 - 509,952 - 13,160,305 147,882,8		-	· ·	-		
2061 147,882,818 - 454,674 - 14,396,409 161,824,5	· · ·	-		-		
2062 161,824,553 - 403,753 - 15,758,211 177,179,0		-		-		
2063 177,179,011 - 357,302 - 17,257,535 194,079,2		-		-		
2064 194,079,244 - 315,219 - 18,907,359 212,671,3		-		-		
2065 212,671,384 - 277,393 - 20,721,937 233,115,5	20,721,937	-	277,393	-	212,671,384	2065

 $\label{thm:continuous} Table~3$  Hypothetical Assumptions: 9.75% and RP-2000 Generational Mortality

Fiscal Year Beginning 10/1	Projected Beginning Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments*	Projected Administrative Expense	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2066	233,115,928	-	243,691	<u> </u>	22,716,923	255,589,160
2067	255,589,160	_	213,844	-	24,909,518	280,284,834
2068	280,284,834	_	187,603	-	27,318,626	307,415,857
2069	307,415,857	_	164,554	-	29,965,024	337,216,327
2070	337,216,327	_	144,307	-	32,871,557	369,943,577
2071	369,943,577	_	126,524	_	36,063,331	405,880,384
2072	405,880,384	_	110,891	-	39,567,932	445,337,425
2073	445,337,425	_	97,094	-	43,415,666	488,655,997
2074	488,655,997	_	84,826	-	47,639,824	536,210,995
2075	536,210,995	_	73,918	_	52,276,969	588,414,046
2076	588,414,046	_	64,178	-	57,367,241	645,717,109
2077	645,717,109	_	55,430	_	62,954,716	708,616,395
2078	708,616,395	_	47,548	-	69,087,781	777,656,628
2079	777,656,628	_	40,467	-	75,819,548	853,435,709
2080	853,435,709	_	34,141	-	83,208,317	936,609,885
2081	936,609,885	_	28,594	-	91,318,070	1,027,899,361
2082	1,027,899,361	_	23,783	-	100,219,028	1,128,094,606
2083	1,128,094,606	-	19,621	-	109,988,268	1,238,063,253
2084	1,238,063,253	-	16,050	-	120,710,385	1,358,757,588
2085	1,358,757,588	-	13,002	-	132,478,231	1,491,222,817
2086	1,491,222,817	-	10,411	-	145,393,717	1,636,606,123
2087	1,636,606,123	-	8,223	-	159,568,696	1,796,166,596
2088	1,796,166,596	-	6,416	-	175,125,930	1,971,286,110
2089	1,971,286,110	_	4,939	-	192,200,155	2,163,481,326
2090	2,163,481,326	-	3,755	-	210,939,246	2,374,416,817
2091	2,374,416,817	-	2,817	-	231,505,502	2,605,919,502
2092	2,605,919,502	-	2,080	-	254,077,050	2,859,994,472
2093	2,859,994,472	-	1,508	-	278,849,388	3,138,842,352
2094	3,138,842,352	-	1,072	-	306,037,077	3,444,878,357
2095	3,444,878,357	-	746	-	335,875,603	3,780,753,214
2096	3,780,753,214	-	506	-	368,623,414	4,149,376,122
2097	4,149,376,122	-	338	-	404,564,155	4,553,939,939
2098	4,553,939,939	-	221	-	444,009,133	4,997,948,851
2099	4,997,948,851	-	143	-	487,300,006	5,485,248,714
2100	5,485,248,714	-	91	-	534,811,745	6,020,060,368
2101	6,020,060,368	-	57	-	586,955,883	6,607,016,194
2102	6,607,016,194	-	35	-	644,184,077	7,251,200,236
2103	7,251,200,236	-	21	-	706,992,022	7,958,192,237
2104	7,958,192,237	-	13	-	775,923,742	8,734,115,966
2105	8,734,115,966	-	8	-	851,576,306	9,585,692,264
2106	9,585,692,264	-	5	-	934,604,995	10,520,297,254
2107	10,520,297,254	-	3	-	1,025,728,982	11,546,026,233
2108	11,546,026,233	-	2	-	1,125,737,558	12,671,763,789
2109	12,671,763,789	-	1	-	1,235,496,969	13,907,260,757
2110	13,907,260,757	-	-	-	1,355,957,924	15,263,218,681

<sup>\*</sup>All DROP Balances paid in 2016.

Number of Years Expected Benefit Payments Sustained: 999.99

This projection assumes no further contributions, assumes no further benefit accruals, and assumes Market Value of Assets earn 9.75% interest. It is important to note that as long as the Actuarially Determined Contribution is made each year, the Plan will never become insolvent. Furthermore, State and local laws mandate that the Actuarially Determined Contribution be made each year.

## ACTUAL AND HYPOTHETICAL CONTRIBUTIONS APPLICABLE TO THE FISCAL YEAR ENDING SEPTEMBER 30, 2018

Valuation Date: 10/1/2016

	ACTUAL	HYPOTHETICAL	
	7.75% RP-2000 Generational	5.75% RP-2000 Generational	9.75% RP-2000 Generational
Total Required Contribution (Fixed \$)	\$1,746,113	\$2,636,165	\$1,015,292
Total Required Contribution (% of Payroll)	21.9%	33.1%	12.7%
Expected Member Contribution	330,958	327,772	334,144
Expected Sponsor Contribution (Fixed \$)	\$1,415,155	\$2,308,393	\$681,148
Expected Sponsor Contribution (% of Payroll)	17.8%	29.0%	8.6%
ASSETS			
Actuarial Value <sup>1</sup>	23,389,771	23,389,771	23,389,771
Market Value <sup>1</sup>	22,995,296	22,995,296	22,995,296
<u>LIABILITIES</u>			
Present Value of Benefits			
Active Members	40.000.000		=
Retirement Benefits	19,832,650	27,905,468	14,703,159
Disability Benefits	845,000	1,110,162	663,850
Death Benefits Vested Benefits	320,255 645,307	426,843	245,904
Refund of Contributions	70,727	1,179,742 73,266	377,857 68,374
Service Retirees	9,647,341	11,427,488	8,324,330
DROP Retirees <sup>1</sup>	2,408,022	2,784,209	2,132,496
Beneficiaries	61,127	68,240	55,811
Disability Retirees	384,861	475,651	321,565
Terminated Vested	1,393,401	1,899,646	1,071,917
Total:	35,608,691	47,350,715	27,965,263
Present Value of Future Salaries	51,593,633	57,167,976	47,080,280
Present Value of Future			
Member Contributions	2,063,745	2,286,719	1,883,211
Total Normal Cost	595,274	948,488	389,517
Present Value of Future			
Normal Costs (Entry Age Normal)	3,766,326	6,727,672	2,220,391
Total Actuarial Accrued Liability <sup>1</sup>	31,842,365	40,623,043	25,744,872
Unfunded Actuarial Accrued Liability (UAAL)	8,452,594	17,233,272	2,355,101

## ACTUAL AND HYPOTHETICAL CONTRIBUTIONS APPLICABLE TO THE FISCAL YEAR ENDING SEPTEMBER 30, 2018

Valuation Date: 10/1/2016

	ACTUAL	HYPOTHETICAL		
	7.75% RP-2000 Generational	5.75% RP-2000 Generational	9.75% RP-2000 Generational	
PENSION COST				
Normal Cost <sup>2</sup>	647,712	1,022,105	427,910	
Administrative Expenses <sup>2</sup>	61,744	61,149	62,338	
Payment Required To Amortize UAAL <sup>2</sup>	1,036,657	1,552,911	525,044	
Total Required Contribution	\$1,746,113	\$2,636,165	\$1,015,292	

<sup>&</sup>lt;sup>1</sup> The asset values and liabilities for DROP Members include accumulated DROP Balances as of 9/30/2016.

<sup>&</sup>lt;sup>2</sup> Contributions developed as of 10/1/2016 displayed above have been adjusted to account for assumed salary increase and interest components.