

RETIREMENT PLAN FOR THE EMPLOYEES OF THE
BOCA RATON HOUSING AUTHORITY

ACTUARIAL VALUATION
AS OF OCTOBER 1, 2019

DETERMINES THE CONTRIBUTION
FOR THE 2019/20 FISCAL YEAR



	<u>Page</u>
Discussion	1
 <u>Funding Results</u>	
Table I-A	Minimum Required Contribution I-1
Table I-B	Sensitivity Analysis I-2
Table I-C	Gain and Loss Analysis I-3
Table I-D	Present Value of Future Benefits I-4
Table I-E	Present Value of Accrued Benefits I-5
Table I-F	Present Value of Vested Benefits I-6
Table I-G	Entry Age Normal Accrued Liability I-7
 <u>Accounting Results</u>	
GASB 67/68 Supplement as of September 30, 2019	
 <u>Assets</u>	
Table II-A	Actuarial Value of Assets II-1
Table II-B	Market Value of Assets II-2
Table II-C	Investment Return II-3
Table II-D	Asset Reconciliation II-4
Table II-E	Historical Trust Fund Detail II-5
Table II-F	Other Reconciliations II-6
 <u>Data</u>	
Table III-A	Summary of Participant Data III-1
Table III-B	Data Reconciliation III-2
Table III-C	Active Participant Data III-3
Table III-D	Active Age-Service Distribution III-4
Table III-E	Active Age-Service-Salary Table III-5
Table III-F	Inactive Participant Data III-6
Table III-G	Projected Benefit Payments III-7
 <u>Methods & Assumptions</u>	
Table IV-A	Summary of Actuarial Methods and Assumptions IV-1
Table IV-B	Changes in Actuarial Methods and Assumptions IV-3
 <u>Plan Provisions</u>	
Table V-A	Summary of Plan Provisions V-1
Table V-B	Summary of Plan Amendments V-5



March 1, 2020

Introduction

This report presents the results of the October 1, 2019 actuarial valuation for the Retirement Plan for the Employees of the Boca Raton Housing Authority. The report is based on the participant data and asset information provided by the pension plan administrator and, except for a cursory review for reasonableness including a comparison to the data provided for the previous valuation, we have not attempted to verify the accuracy of this information.

The primary purpose of this report is to provide a summary of the funded status of the plan as of October 1, 2019 and to determine the minimum required contribution under Chapter 112, Florida Statutes, for the 2019/20 plan year. In addition, this report provides a projection of the long-term funding requirements of the plan, statistical information concerning the assets held in the trust, statistical information concerning the participant population, and a summary of any recent plan changes.

The liabilities and cost presented in this report are based on numerous assumptions concerning the cost of benefits to be provided in the future, long-term investment returns, and the future demographic experience of the current participants. Anyone referring to this report should remember that the cost developed herein is only an *estimate* of the true cost of providing post-employment pension benefits. No one can predict with certainty whether the true cost will be higher or lower than the cost presented in this report. The calculated cost is entirely dependent upon the assumptions that are described in Table IV-A. If any of the assumptions is changed, then the cost shown in this report will change accordingly. Likewise, if any of the assumptions is not completely realized, then the cost shown in this report will change in the future.

Certain assumptions play a bigger role than others in determining the cost of the post-employment pension benefits. In some cases, relatively small changes in a particular assumption can have a dramatic impact on the anticipated cost of benefits. Although a thorough analysis of the impact of such changes is beyond the scope of this report, Table I-B illustrates the impact that alternative long-term investment returns would have on the contribution rate.

Minimum Required Contribution

Table I-A shows the development of the minimum required contribution for the 2019/20 plan year. The minimum required contribution rate is 7.16% of covered payroll, which represents an increase of 0.64% of payroll from the prior valuation.

The normal cost rate as of October 1, 2019 is 6.90%, as compared to a rate of 6.29% determined in the prior valuation. Table I-C provides a breakdown of the sources of change in the normal cost rate. Significantly, the rate increased by 0.24% of payroll due to investment shortfalls and increased by another 0.37% of payroll due to demographic experience. The market value of assets earned 7.51% during the 2017/18 plan year and earned 5.35% during the 2018/19 plan year, whereas a 7.00% annual investment return was required to maintain a stable contribution rate. The



demographic loss occurred primarily because pay increases during the past two years were much greater than expected.

Chapter 112, Florida Statutes, sets forth the rules concerning the minimum required contribution for public pension plans within the state. Essentially, the Authority must contribute an amount equal to the annual normal cost of the plan, adjusted as necessary for administrative expenses and to reflect interest on any delayed payment of the contribution beyond the valuation date. On this basis, the Authority's 2019/20 minimum required contribution will be equal to 7.16% multiplied by the total pensionable earnings for the 2019/20 fiscal year for the active employees who are covered by the plan. Assuming that an October 1, 2020 actuarial valuation is not prepared, the 7.16% contribution rate will apply for the 2020/21 plan year as well.

Based on the current assets, participant data, and actuarial assumptions and methods that are used to value the plan, the present-day value of the total long-term funding requirement is \$4,401,845. As illustrated in Table I-A, current assets are sufficient to cover \$3,253,372 of this amount, the employer's 2019/20 expected contribution will cover \$50,690 of this amount, and future employee contributions are expected to cover \$559,025 of this amount, leaving \$538,758 to be covered by future employer funding beyond the 2019/20 fiscal year. Again, demographic and investment experience that differs from that assumed will either increase or decrease the future employer funding requirement.

Advance Employer Contribution

The Authority has made contributions to the plan in excess of the minimum amount that was required to be contributed pursuant to Chapter 112. In this report, the excess contributions are referred to as an "advance employer contribution." As of October 1, 2019, the advance employer contribution is \$101,789, which reflects the advance employer contribution of \$122,410 as of October 1, 2017 minus \$20,621 to cover employer contributions that were less than the minimum required contribution for the 2017/18 and 2018/19 plan years as shown in Table II-F.

The Authority may apply all or any portion of the advance employer contribution towards the minimum required contribution for the 2019/20 plan year or for any later plan year. The minimum required contribution for that plan year will be reduced dollar-for-dollar by the amount of the advance employer contribution that is applied in this manner.

Alternatively, at any time, the Authority may apply all or any portion of the advance employer contribution as an extra contribution in excess of the minimum required contribution. In this case, the immediate application of the entire balance of the advance employer contribution as of October 1, 2019 would reduce the normal cost rate to 5.71% of payroll and would reduce the minimum required contribution for the 2019/20 plan year to 5.92% of payroll.

Identification and Assessment of Risk

The liabilities and cost presented in this report are based on numerous assumptions concerning the cost of benefits to be provided in the future, long-term investment returns, and the future demographic experience of the current participants. Anyone referring to this report should remember that the cost developed herein is only an estimate of the



true cost of providing post-employment pension benefits. No one can predict with certainty whether the true cost will be higher or lower than the cost presented in this report. The calculated cost is entirely dependent upon the assumptions that are described in Table IV-A. If any of the assumptions is changed, then the cost shown in this report will change accordingly. Likewise, there is always a risk that, should these assumptions not be realized, the liabilities of the plan, the contributions required to fund the plan, and the funded status of the plan may be significantly different than the amounts shown in this report.

Although a thorough analysis of the risk of not meeting the assumptions is beyond the scope of this report, this discussion is intended to identify the significant risks faced by the plan. In some cases, a more detailed review of the risks, including numerical analysis, may be appropriate to help the plan sponsor and other interested parties assess the specific impact of not realizing certain assumptions. For example, Table I-B illustrates the impact that alternative long-term investment returns would have on the contribution rate. Note that this report is not intended to provide advice on the management or reduction of the identified risks nor is this report intended to provide investment advice.

The most significant risk faced by most defined benefit pension plans is investment risk, i.e. the risk that long-term investment returns will be less than assumed. Other related risks include a risk that, if the investments of the plan decline dramatically over a short period of time (such as occurred with many pension plans in 2008), the plan's assets may not have sufficient time to recover before benefits become due. Even if the assets of the plan grow in accordance with the assumed investment return over time, if benefit payments are expected to be large in the short-term (for example, if the plan provides an actuarial equivalent lump sum payment option and a large number of participants are expected to become entitled to such a lump sum in the near future), the plan's assets may not be sufficient to support such a high level of benefit payments. We have provided a 10-year projection of the expected benefit payments in Table III-G to help the Trustees in formulating an investment policy that is expected to provide an investment return that meets both the short- and long-term cash flow needs of the pension plan.

Another source of risk is demographic experience. This is the risk that participants will receive salary increases that are different than the amount assumed, that participants will retire, become disabled, or terminate their employment at a rate that is different than assumed, and that participants will live longer than assumed, just to cite a few examples of the demographic risk faced by the plan. Although for most pension plans, the demographic risk is not as significant as the investment risk, particularly in light of the fact that the mortality assumption includes a component for future life expectancy increases, the demographic risk can nevertheless be a significant contributing factor to liabilities and contribution rates that become higher than anticipated.

A third source of risk is the risk that the plan sponsor (or other contributing entities) will not make, or will not have the ability to make, the contributions that are required to keep the plan funded at a sufficient level. Material changes in the number of covered employees, covered payroll, and, in some cases, hours worked by active participants can also significantly impact the plan's liabilities and the level of contributions received by the plan.

Finally, an actuarial funding method has been used to allocate the gap between projected liabilities and assets to each year in the future. The contribution rate under some funding methods is higher during the early years of the plan and then is lower during the later years of the plan. Other funding methods provide for lower contribution rates initially, with increasing contribution rates over time.



The Trustees have adopted the aggregate funding method for this plan, which is expected to result in a contribution rate that is level as a percentage of payroll over the working life of the plan's active participants. A brief description of the actuarial funding method is provided in Table IV-A.

Contents of the Report

Tables I-D through I-G provide a detailed breakdown of various liability amounts by type of benefit and by participant group. Tables II-A through II-F provide information concerning the assets of the trust fund. Tables III-A through III-G provide statistical information concerning the plan's participant population. In particular, Table III-G gives a 10-year projection of the cash that is expected to be required from the trust fund in order to pay benefits to the current group of participants. Finally, Tables IV-A through V-B provide a summary of the actuarial assumptions and methods that are used to value the plan's benefits and of the relevant plan provisions as of October 1, 2019, as well as a summary of the changes that have occurred since the previous valuation report was prepared.

Certification

This actuarial valuation was prepared 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, the techniques and assumptions used are reasonable and meet the requirements and intent of Chapter 112, Florida Statutes. There is no benefit or expense to be provided by the plan and/or paid from the plan's assets for which liabilities or current costs have not been established or otherwise taken into account in the valuation. All known events or trends which may require a material change in plan costs or required contribution rates have been taken into account in the valuation.

For the firm,

Charles T. Carr

Charles T. Carr
Consulting Actuary
Southern Actuarial Services Company, Inc.

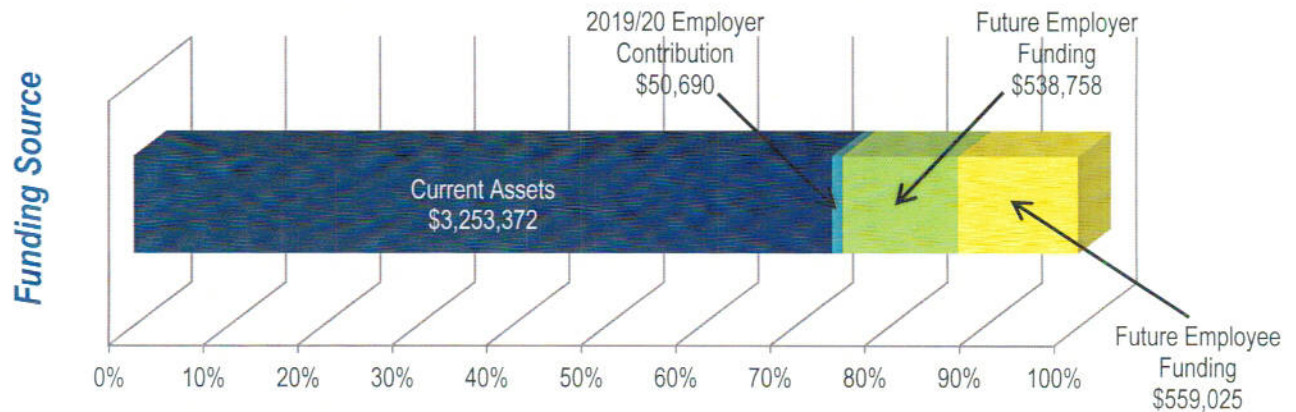
Enrolled Actuary No. 17-04927

The individual above is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



Minimum Required Contribution

Table I-A



For the 2019/20 Plan Year

Present Value of Future Benefits	\$4,336,793
Present Value of Future Administrative Expenses	\$65,052
Actuarial Value of Assets	(\$3,253,372)
Present Value of Future Employee Contributions	(\$559,025)
Present Value of Future Normal Costs	\$589,448
Present Value of Future Payroll	÷ \$8,543,662
Normal Cost Rate	= 6.8992%
Expected Payroll	x \$708,413
Normal Cost	\$48,875
Adjustment to Reflect Monthly Employer Contributions	\$1,815
Preliminary Employer Contribution for the 2019/20 Plan Year	\$50,690
Expected Payroll for the 2019/20 Plan Year	÷ \$708,413

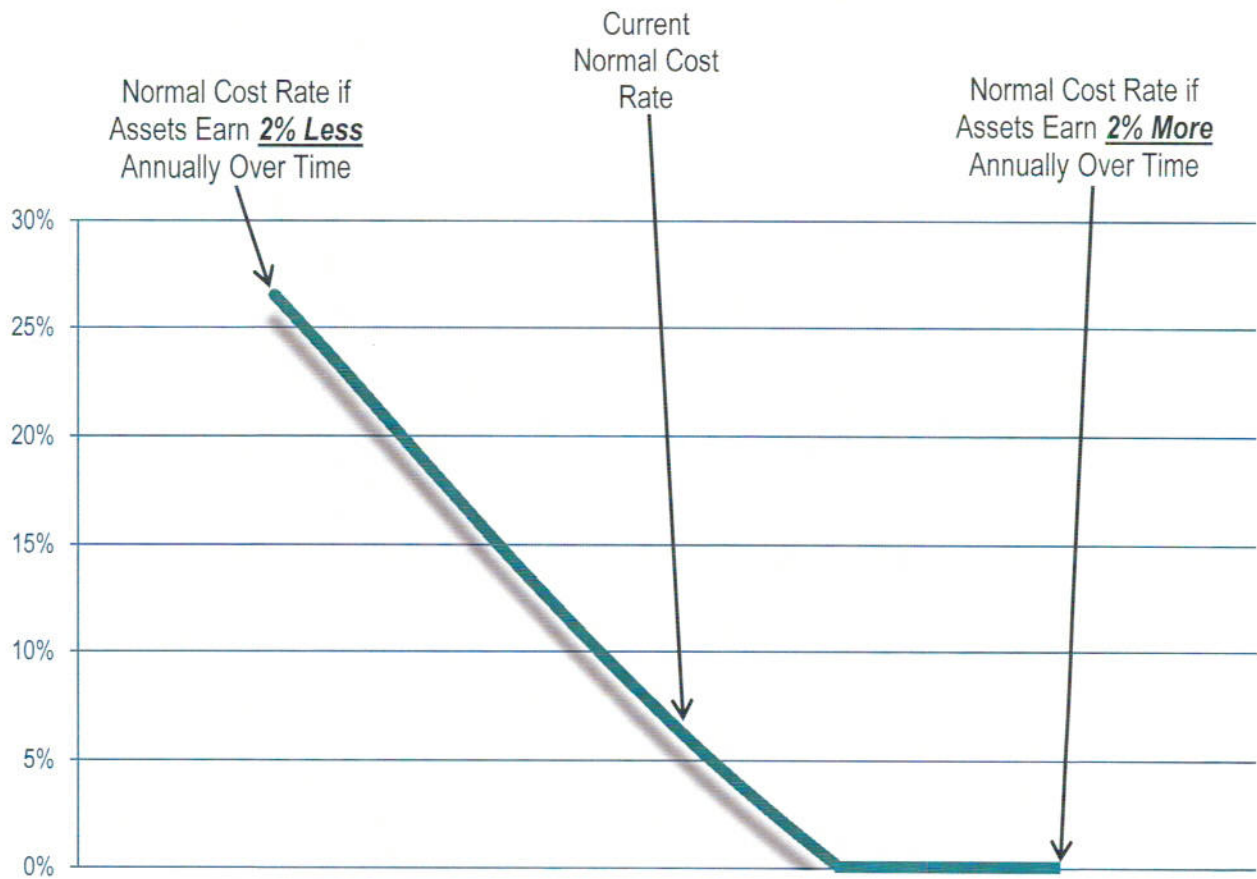
Minimum Required Contribution Rate 7.16%

(The actual contribution should be based on the minimum required contribution rate multiplied by the actual payroll for the year.)



Sensitivity Analysis

Table I-B



The line above illustrates the sensitivity of the contribution rate to changes in the long-term investment return.



Gain and Loss Analysis

Table I-C

Previous normal cost rate	6.29%
Increase (decrease) due to investment gains and losses	0.24%
Increase (decrease) due to demographic experience	0.37%
Increase (decrease) due to plan amendments	0.00%
Increase (decrease) due to actuarial assumption changes	0.00%
Increase (decrease) due to actuarial method changes	0.00%
Current normal cost rate	<u>6.90%</u>



Present Value of Future Benefits

Table I-D

	Old Assumptions <u>w/o Amendment</u>	Old Assumptions <u>w/ Amendment</u>	New Assumptions <u>w/ Amendment</u>
<u>Actively Employed Participants</u>			
Retirement benefits	\$2,814,340	\$2,814,340	\$2,814,340
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$2,814,340	\$2,814,340	\$2,814,340
<u>Deferred Vested Participants</u>			
Retirement benefits	\$181,180	\$181,180	\$181,180
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$181,180	\$181,180	\$181,180
<u>Due a Refund of Contributions</u>	\$52,259	\$52,259	\$52,259
<u>Deferred Beneficiaries</u>	\$118,814	\$118,814	\$118,814
<u>Retired Participants</u>			
Service retirements	\$1,170,200	\$1,170,200	\$1,170,200
Disability retirements	\$0	\$0	\$0
Beneficiaries receiving	\$0	\$0	\$0
DROP participants	\$0	\$0	\$0
Sub-total	\$1,170,200	\$1,170,200	\$1,170,200
<u>Grand Total</u>	<u>\$4,336,793</u>	<u>\$4,336,793</u>	<u>\$4,336,793</u>
Present Value of Future Payroll	\$8,543,662	\$8,543,662	\$8,543,662
Present Value of Future Employee Contribs.	\$559,025	\$559,025	\$559,025
Present Value of Future Employer Contribs.	\$589,448	\$589,448	\$589,448



Present Value of Accrued Benefits

Table I-E

	Old Assumptions <u>w/o Amendment</u>	Old Assumptions <u>w/ Amendment</u>	New Assumptions <u>w/ Amendment</u>
<u>Actively Employed Participants</u>			
Retirement benefits	\$702,545	\$702,545	\$702,545
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$702,545	\$702,545	\$702,545
<u>Deferred Vested Participants</u>			
Retirement benefits	\$181,180	\$181,180	\$181,180
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$181,180	\$181,180	\$181,180
<u>Due a Refund of Contributions</u>	\$52,259	\$52,259	\$52,259
<u>Deferred Beneficiaries</u>	\$118,814	\$118,814	\$118,814
<u>Retired Participants</u>			
Service retirements	\$1,170,200	\$1,170,200	\$1,170,200
Disability retirements	\$0	\$0	\$0
Beneficiaries receiving	\$0	\$0	\$0
DROP participants	\$0	\$0	\$0
Sub-total	\$1,170,200	\$1,170,200	\$1,170,200
<u>Grand Total</u>	<u>\$2,224,998</u>	<u>\$2,224,998</u>	<u>\$2,224,998</u>
<u>Funded Percentage</u>	150.79%	150.79%	150.79%

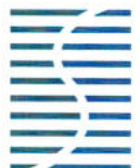
(Note: Funded percentage is equal to the ratio of the usable portion of the market value of assets divided by the present value of accrued benefits.)



Present Value of Vested Benefits

Table I-F

	Old Assumptions w/o Amendment	Old Assumptions w/ Amendment	New Assumptions w/ Amendment
<u>Actively Employed Participants</u>			
Retirement benefits	\$482,499	\$482,499	\$482,499
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$482,499	\$482,499	\$482,499
<u>Deferred Vested Participants</u>			
Retirement benefits	\$181,180	\$181,180	\$181,180
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$181,180	\$181,180	\$181,180
<u>Due a Refund of Contributions</u>	\$52,259	\$52,259	\$52,259
<u>Deferred Beneficiaries</u>	\$118,814	\$118,814	\$118,814
<u>Retired Participants</u>			
Service retirements	\$1,170,200	\$1,170,200	\$1,170,200
Disability retirements	\$0	\$0	\$0
Beneficiaries receiving	\$0	\$0	\$0
DROP participants	\$0	\$0	\$0
Sub-total	\$1,170,200	\$1,170,200	\$1,170,200
<u>Grand Total</u>	<u>\$2,004,952</u>	<u>\$2,004,952</u>	<u>\$2,004,952</u>



Entry Age Normal Accrued Liability

Table I-G

	Old Assumptions w/o Amendment	Old Assumptions w/ Amendment	New Assumptions w/ Amendment
<u>Actively Employed Participants</u>			
Retirement benefits	\$1,077,172	\$1,077,172	\$1,077,172
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$1,077,172	\$1,077,172	\$1,077,172
<u>Deferred Vested Participants</u>			
Retirement benefits	\$181,180	\$181,180	\$181,180
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$181,180	\$181,180	\$181,180
<u>Due a Refund of Contributions</u>	\$52,259	\$52,259	\$52,259
<u>Deferred Beneficiaries</u>	\$118,814	\$118,814	\$118,814
<u>Retired Participants</u>			
Service retirements	\$1,170,200	\$1,170,200	\$1,170,200
Disability retirements	\$0	\$0	\$0
Beneficiaries receiving	\$0	\$0	\$0
DROP participants	\$0	\$0	\$0
Sub-total	\$1,170,200	\$1,170,200	\$1,170,200
<u>Grand Total</u>	<u>\$2,599,625</u>	<u>\$2,599,625</u>	<u>\$2,599,625</u>



Actuarial Value of Assets

Table II-A

Market Value of Assets as of October 1, 2019	\$3,355,161
Minus advance employer contribution	(\$101,789)

Actuarial Value of Assets as of October 1, 2019 **\$3,253,372**

Historical Actuarial Value of Assets

October 1, 2010	\$1,413,281
October 1, 2011	\$1,528,642
October 1, 2012	\$1,928,895
October 1, 2013	\$2,244,979
October 1, 2014	\$2,440,510
October 1, 2015	\$2,511,547
October 1, 2016	\$2,646,999
October 1, 2017	\$2,930,691
October 1, 2018	\$3,111,308
October 1, 2019	\$3,253,372

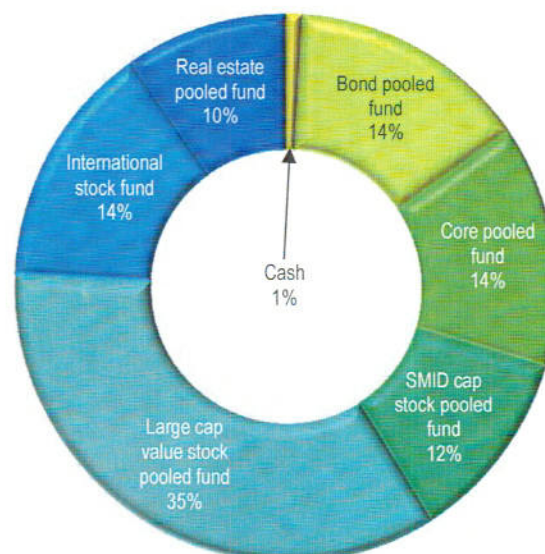


Market Value of Assets

Table II-B

As of October 1, 2019

Market Value of Assets	<u>\$3,355,161</u>
Cash	\$30,196
Bond pooled fund	\$483,143
Core pooled fund	\$479,788
SMID cap stock pooled fund	\$385,844
Large cap value stock pooled fund	\$1,164,241
International stock fund	\$486,498
Real estate pooled fund	\$325,451

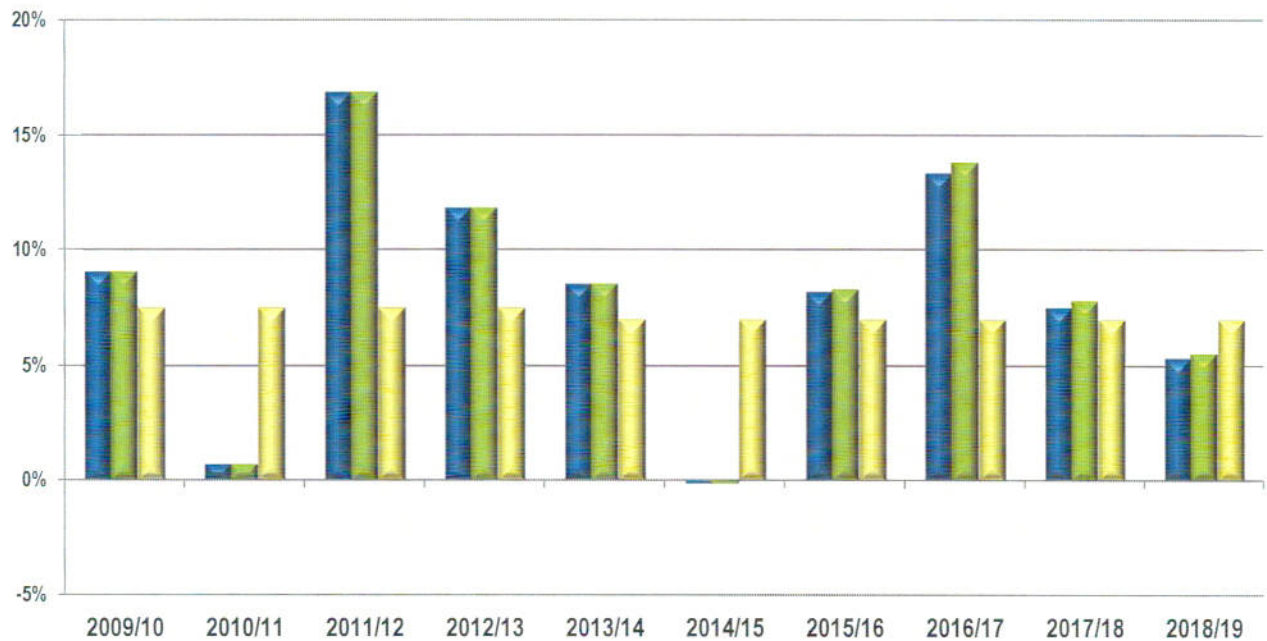
**Historical Market Value of Assets**

October 1, 2010	\$1,413,281
October 1, 2011	\$1,528,642
October 1, 2012	\$1,928,895
October 1, 2013	\$2,244,979
October 1, 2014	\$2,440,510
October 1, 2015	\$2,511,547
October 1, 2016	\$2,710,674
October 1, 2017	\$3,053,101
October 1, 2018	\$3,229,146
October 1, 2019	\$3,355,161



Investment Return

Table II-C

*Annual Investment Returns*

■ Market Value Return
■ Actuarial Value Return
■ Assumed Return

Plan Year	Market Value Return	Actuarial Value Return	Assumed Return
2009/10	9.07%	9.07%	7.50%
2010/11	0.74%	0.74%	7.50%
2011/12	16.90%	16.90%	7.50%
2012/13	11.85%	11.85%	7.50%
2013/14	8.54%	8.54%	7.00%
2014/15	-0.10%	-0.10%	7.00%
2015/16	8.19%	8.29%	7.00%
2016/17	13.34%	13.82%	7.00%
2017/18	7.51%	7.82%	7.00%
2018/19	5.35%	5.54%	7.00%
10yr. Avg.	8.02%	8.13%	7.20%



Asset Reconciliation

Table II-D

	<u>Market Value</u>	<u>Actuarial Value</u>
As of October 1, 2017	\$3,053,101	\$2,930,691
<i>Increases Due To:</i>		
Employer Contributions	\$61,805	\$61,805
Employee Contributions	\$85,851	\$85,851
Service Purchase Contributions	\$0	\$0
Total Contributions	<u>\$147,656</u>	<u>\$147,656</u>
Interest and Dividends	\$0	
Realized Gains (Losses)	\$0	
Unrealized Gains (Losses)	\$399,038	
Total Investment Income	<u>\$399,038</u>	\$399,038
Other Income	\$0	
Total Income	<u>\$546,694</u>	<u>\$546,694</u>
<i>Decreases Due To:</i>		
Monthly Benefit Payments	(\$220,133)	(\$220,133)
Refund of Employee Contributions	(\$375)	(\$375)
Total Benefit Payments	<u>(\$220,508)</u>	<u>(\$220,508)</u>
Investment Expenses	\$0	
Administrative Expenses	(\$24,126)	(\$24,126)
Advance Employer Contribution		\$20,621
Total Expenses	<u>(\$244,634)</u>	<u>(\$224,013)</u>
As of October 1, 2019	<u>\$3,355,161</u>	<u>\$3,253,372</u>



Historical Trust Fund Detail

Table II-E

Income

Plan	Employer	Employee	Service	Interest /	Realized	Unrealized	Other
<u>Year</u>	<u>Contribs.</u>	<u>Contribs.</u>	<u>Purchase</u>	<u>Dividends</u>	<u>Gains /</u>	<u>Gains /</u>	<u>Income</u>
			<u>Contribs.</u>		<u>Losses</u>	<u>Losses</u>	
2009/10	\$82,010	\$56,897	\$0	\$0	\$0	\$113,469	\$0
2010/11	\$88,313	\$56,005	\$0	\$0	\$0	\$10,832	\$0
2011/12	\$93,385	\$61,301	\$0	\$0	\$0	\$269,352	\$0
2012/13	\$85,150	\$55,850	\$0	\$0	\$0	\$233,555	\$0
2013/14	\$65,558	\$46,259	\$0	\$0	\$0	\$191,873	\$0
2014/15	\$66,090	\$45,532	\$0	\$0	\$0	-\$2,451	\$0
2015/16	\$66,435	\$45,069	\$0	\$0	\$0	\$205,331	\$0
2016/17	\$61,302	\$41,361	\$0	\$0	\$0	\$360,431	\$0
2017/18	\$34,538	\$40,911	\$0	\$0	\$0	\$227,404	\$0
2018/19	\$27,267	\$44,940	\$0	\$0	\$0	\$171,634	\$0

Expenses

Plan	Monthly	Contrib.	Admin.	Invest.
<u>Year</u>	<u>Benefit</u>	<u>Refunds</u>	<u>Expenses</u>	<u>Expenses</u>
	<u>Payments</u>			
2009/10	\$2,673	\$27,720	\$9,796	\$0
2010/11	\$2,673	\$32,774	\$4,342	\$0
2011/12	\$6,352	\$8,249	\$9,184	\$0
2012/13	\$10,202	\$42,550	\$5,719	\$0
2013/14	\$28,096	\$66,206	\$13,857	\$0
2014/15	\$24,622	\$6,761	\$6,751	\$0
2015/16	\$84,771	\$16,424	\$16,513	\$0
2016/17	\$104,821	\$7,536	\$8,310	\$0
2017/18	\$109,899	\$375	\$16,534	\$0
2018/19	\$110,234	\$0	\$7,592	\$0

Other Actuarial Adjustments

Advance
Employer
<u>Contribs.</u>
\$0
\$0
\$0
\$0
\$0
\$0
\$63,675
\$58,735
-\$4,572
-\$16,049

Note: Information was not available to separate the investment expenses from the investment income nor was information available to separate the investment income by source.



Other Reconciliations

Table II-F

Advance Employer Contribution

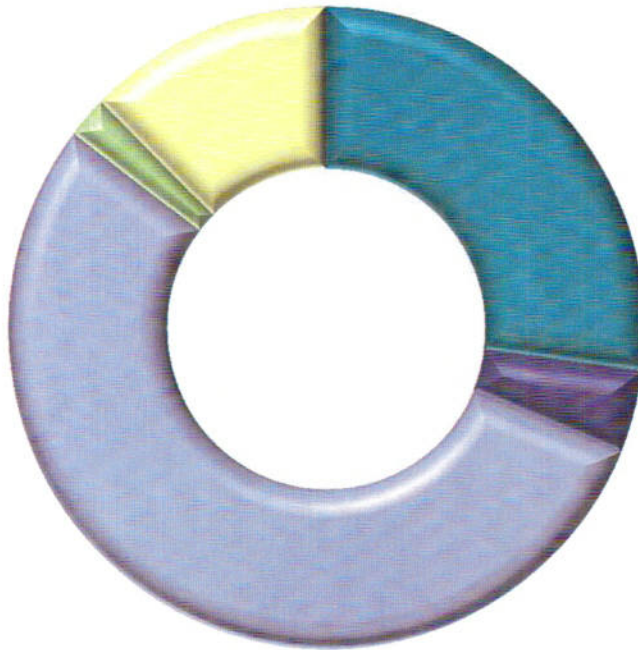
Advance Employer Contribution as of October 1, 2017	\$122,410
Additional Employer Contribution	\$34,538
Minimum Required Contribution	(\$39,110)
Net Increase in Advance Employer Contribution	(\$4,572)
Advance Employer Contribution as of October 1, 2018	<u>\$117,838</u>
Additional Employer Contribution	\$27,267
Minimum Required Contribution	(\$43,316)
Net Increase in Advance Employer Contribution	(\$16,049)
Advance Employer Contribution as of October 1, 2019	<u>\$101,789</u>



Summary of Participant Data

Table III-A

As of October 1, 2019

Actively Employed Participants

Active Participants	13
DROP Participants	0

Inactive Participants

Deferred Vested Participants	2
Due a Refund of Contributions	26
Deferred Beneficiaries	1

Participants Receiving a Benefit

Service Retirements	6
Disability Retirements	0
Beneficiaries Receiving	0

Total Participants 48

Number of Participants Included in Prior Valuations

	Active	DROP	Inactive	Retired	Total
October 1, 2010	N/A	N/A	N/A	N/A	N/A
October 1, 2011	23	0	7	1	31
October 1, 2012	N/A	N/A	N/A	N/A	N/A
October 1, 2013	17	0	20	4	41
October 1, 2014	N/A	N/A	N/A	N/A	N/A
October 1, 2015	14	0	26	4	44
October 1, 2016	N/A	N/A	N/A	N/A	N/A
October 1, 2017	14	0	23	6	43
October 1, 2018	N/A	N/A	N/A	N/A	N/A
October 1, 2019	13	0	29	6	48



Data Reconciliation

Table III-B

	<u>Active</u>	<u>DROP</u>	<u>Deferred Vested</u>	<u>Due a Refund</u>	<u>Def. Benef.</u>	<u>Service Retiree</u>	<u>Disabled Retiree</u>	<u>Benef. Rec'v.</u>	<u>Total</u>
<u>October 1, 2017</u>	14	0	2	21	0	6	0	0	43
<u>Change in Status</u>									
Re-employed									
Terminated	(6)		1	5					
Retired									
<u>Participation Ended</u>									
Transferred Out									
Cashed Out									
Died			(1)						(1)
<u>Participation Began</u>									
Newly Hired	5								5
Transferred In									
New Beneficiary					1				1
Other Adjustment									
<u>October 1, 2019</u>	13	0	2	26	1	6	0	0	48

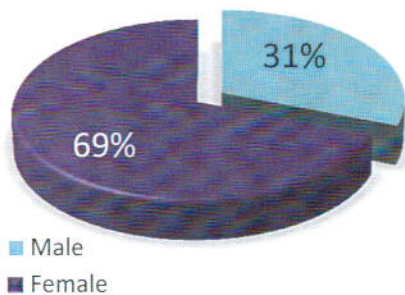


Active Participant Data

Table III-C

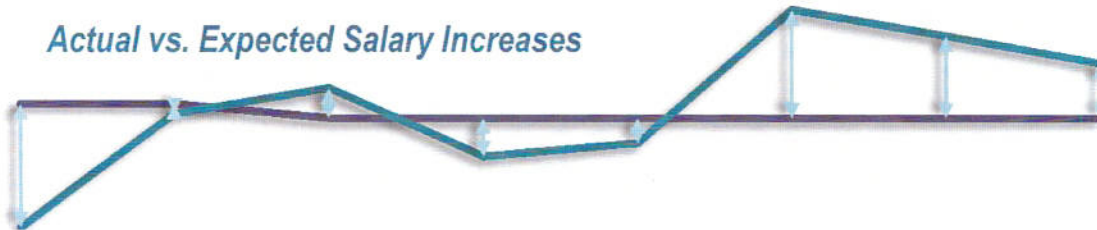
As of October 1, 2019

Gender Mix



Average Age	42.9 years
Average Service	4.7 years
Total Annualized Compensation for the Prior Year	\$677,906
Total Expected Compensation for the Current Year	\$708,413
Average Increase in Compensation for the Prior Year	8.29%
Expected Increase in Compensation for the Current Year	4.50%
Accumulated Contributions for Active Employees	\$227,326

Actual vs. Expected Salary Increases



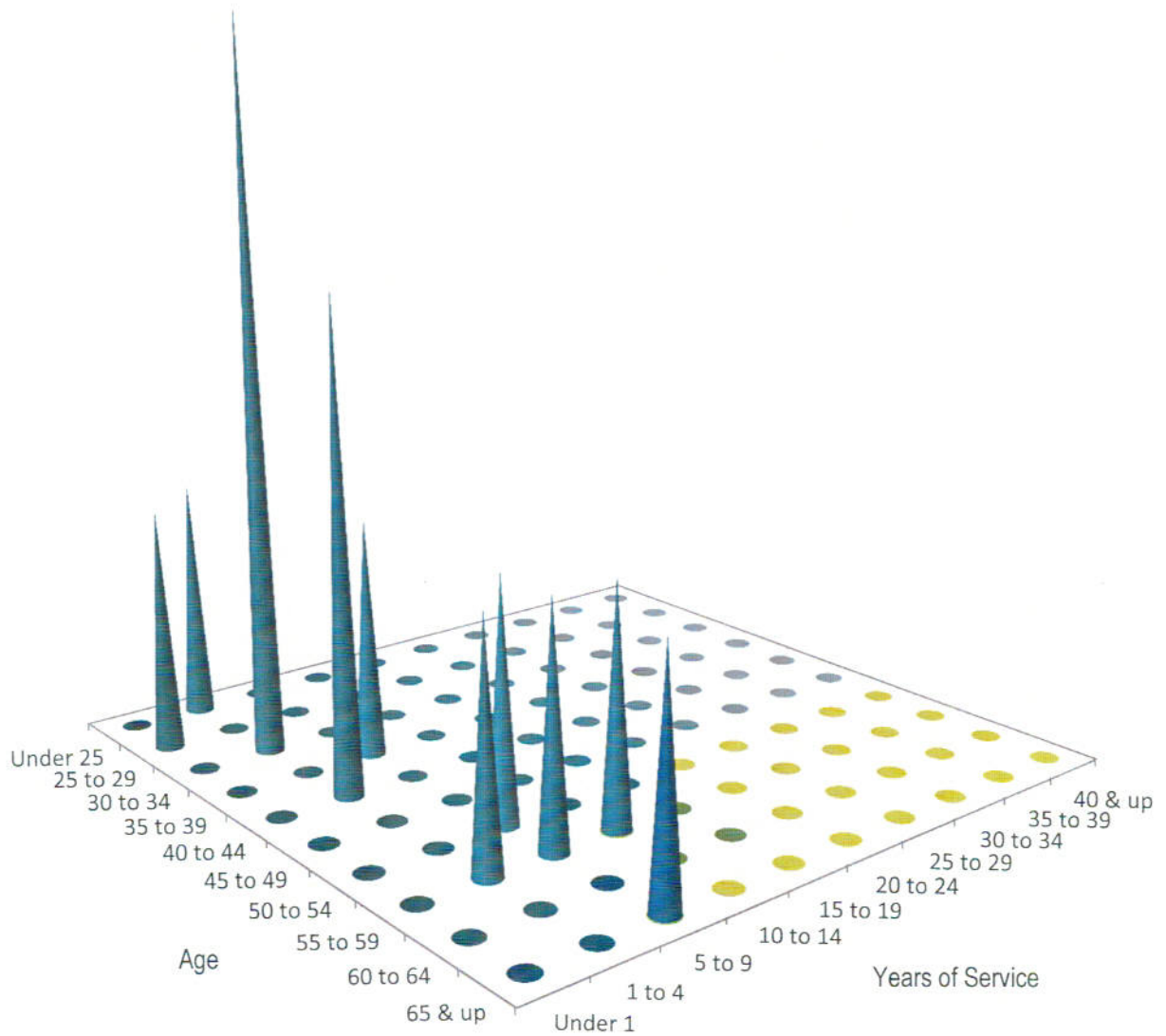
Active Participant Statistics From Prior Valuations

	Average Age	Average Service	Average Salary	Average Expected Salary Increase	Average Actual Salary Increase
October 1, 2010	N/A	N/A	N/A	5.50%	2.76%
October 1, 2011	47.3	3.4	\$36,277	5.50%	7.68%
October 1, 2012	N/A	N/A	N/A	5.50%	-2.96%
October 1, 2013	46.5	4.2	\$38,122	5.50%	4.79%
October 1, 2014	N/A	N/A	N/A	4.50%	6.58%
October 1, 2015	44.3	4.6	\$44,633	4.50%	1.85%
October 1, 2016	N/A	N/A	N/A	4.50%	2.77%
October 1, 2017	41.8	3.7	\$43,542	4.50%	11.94%
October 1, 2018	N/A	N/A	N/A	4.50%	10.17%
October 1, 2019	42.9	4.7	\$52,147	4.50%	8.29%



Active Age-Service Distribution

Table III-D



- ▲ Eligible to retire
- ▲ May be eligible to retire
- ▲ Not eligible to retire



Active Age-Service-Salary Table

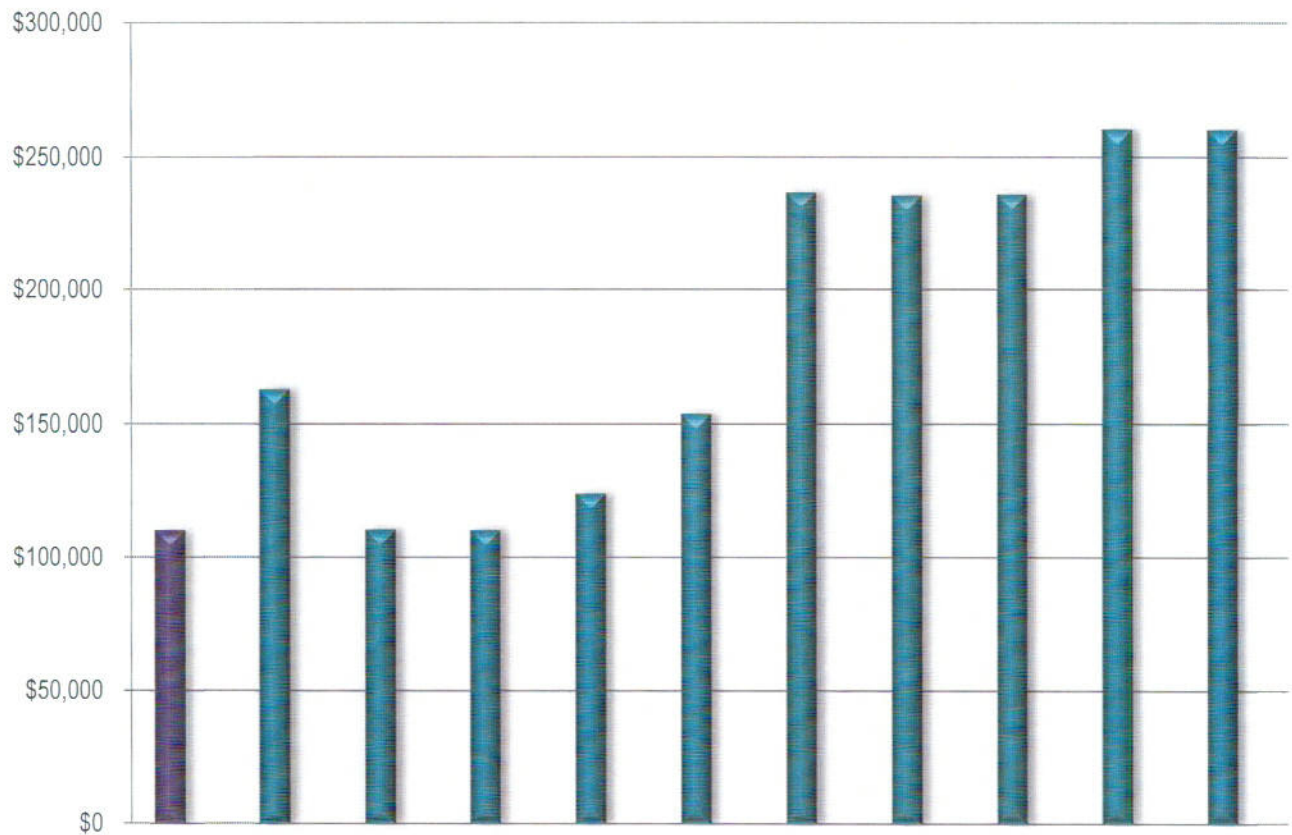
Table III-E

Attained Age	Completed Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	0	1	0	0	0	0	0	0	0	0	1
Avg. Pay	0	45,357	0	0	0	0	0	0	0	0	45,357
25 to 29	1	0	0	0	0	0	0	0	0	0	1
Avg. Pay	51,359	0	0	0	0	0	0	0	0	0	51,359
30 to 34	0	3	0	0	0	0	0	0	0	0	3
Avg. Pay	0	42,684	0	0	0	0	0	0	0	0	42,684
35 to 39	0	0	1	0	0	0	0	0	0	0	1
Avg. Pay	0	0	64,459	0	0	0	0	0	0	0	64,459
40 to 44	0	2	0	0	0	0	0	0	0	0	2
Avg. Pay	0	44,620	0	0	0	0	0	0	0	0	44,620
45 to 49	0	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0	0
50 to 54	0	0	1	0	0	0	0	0	0	0	1
Avg. Pay	0	0	39,178	0	0	0	0	0	0	0	39,178
55 to 59	0	1	1	1	0	0	0	0	0	0	3
Avg. Pay	0	49,488	48,068	122,395	0	0	0	0	0	0	73,317
60 to 64	0	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0	0
65 & up	0	0	1	0	0	0	0	0	0	0	1
Avg. Pay	0	0	40,312	0	0	0	0	0	0	0	40,312
Total	1	7	4	1	0	0	0	0	0	0	13
Avg. Pay	51,359	44,591	48,004	122,395	0	0	0	0	0	0	52,147



Projected Benefit Payments

Table III-G

Actual

For the period October 1, 2018 through September 30, 2019

\$110,234

Projected

For the period October 1, 2019 through September 30, 2020

\$162,833

For the period October 1, 2020 through September 30, 2021

\$110,542

For the period October 1, 2021 through September 30, 2022

\$110,359

For the period October 1, 2022 through September 30, 2023

\$124,152

For the period October 1, 2023 through September 30, 2024

\$153,820

For the period October 1, 2024 through September 30, 2025

\$236,864

For the period October 1, 2025 through September 30, 2026

\$235,814

For the period October 1, 2026 through September 30, 2027

\$236,189

For the period October 1, 2027 through September 30, 2028

\$260,416

For the period October 1, 2028 through September 30, 2029

\$260,221



Summary of Actuarial Methods and Assumptions

Table IV-A

NOTE: The following assumptions and methods have been selected and approved by the Board of Trustees based in part on the advice of the plan's enrolled actuary in accordance with the authority granted to the Board under the pension ordinances and State law.

1. **Actuarial Cost Method**

Aggregate cost method. Under this actuarial cost method, a funding cost is developed for the plan as a level percentage of payroll. The level funding percentage is calculated as the excess of the total future benefit liability over accumulated assets and future employee contributions, with this excess spread over the expected future payroll for current active participants. The normal cost is equal to the level funding percentage multiplied by the expected payroll for the year immediately following the valuation date. The actuarial accrued liability is equal to the accumulated assets. Therefore, under the aggregate cost method, no unfunded accrued liability is developed.

2. **Asset Method**

The actuarial value of assets is equal to the market value of assets.

3. **Interest (or Discount) Rate**

7.00% per annum

4. **Salary Increases**

Plan compensation is assumed to increase at the rate of 4.50% per annum, unless actual plan compensation is known for a prior plan year.

5. **Decrements**

- Pre-retirement mortality: None is assumed.
- Post-retirement mortality: Sex-distinct rates set forth in the RP-2000 Combined Mortality Table, with full generational improvements in mortality using Scale BB
- Disability: None is assumed.
- Termination: None is assumed.
- Retirement: Retirement is assumed to occur upon the attainment of normal retirement age.

No decrements are assumed to occur during the year immediately following the valuation date.



Summary of Actuarial Methods and Assumptions

Table IV-A

(continued)

6. Form of Payment

Future retirees have been assumed to select the 10-year certain and life annuity.

7. Expenses

The total projected benefit liability has been loaded by 1.50% to account for anticipated administrative expenses. In addition, the interest rate set forth in item 3. above is assumed to be net of investment expenses and commissions.



Changes in Actuarial Methods and Assumptions

Table IV-B

No assumptions or methods were changed since the completion of the previous valuation.

The following additional assumption and method changes were made during the past 10 years:

- (1) Effective October 1, 2017, the mortality basis was changed from a 2015 projection of the RP-2000 Mortality Table for annuitants to a full generational projection using Scale BB of the RP-2000 Combined Mortality Table as required by State law.*
- (2) Effective October 1, 2013, the interest (or discount) rate was decreased from 7.50% per annum to 7.00% per annum.*
- (3) Effective October 1, 2013, the assumed increase in future salaries was changed from 5.50% per year to 4.50% per year.*
- (4) Effective October 1, 2013, no decrements are assumed to occur during the year immediately following the valuation date.*
- (5) Effective October 1, 2013, the mortality basis was changed from the 1994 Group Annuity Reserving Table, projected to 2002 by Scale AA, to the RP-2000 Mortality Table for annuitants, projected to 2015 by Scale AA, as published by the Internal Revenue Service (IRS) for purposes of Internal Revenue Code (IRC) section 430.*
- (6) Effective October 1, 2011, the assumed retirement age with respect to Division 1 participants was changed from normal retirement age to age 67.*
- (7) Effective October 1, 2009, the valuation interest rate was decreased from 8.00% per annum to 7.50% per annum.*
- (8) Effective October 1, 2009, the administrative expense assumption was changed from a flat \$5,000 per year to a 1.50% loading of the total projected benefit liability.*



Summary of Plan Provisions

Table V-A

1. Monthly Accrued Benefit

<i>For Division 1:</i>	3.00% of Average Final Compensation multiplied by Credited Service
<i>For Division 2:</i>	2.70% of Average Final Compensation multiplied by Credited Service
<i>For Division 3:</i>	2.60% of Average Final Compensation multiplied by Credited Service
<i>For Group C:</i>	2.00% of Average Final Compensation multiplied by Credited Service

2. Normal Retirement Age and Benefit

- **Age**

<i>For Division 1:</i>	Age 55 with at least 20 years of Credited Service; or Age 62 with at least 10 years of Credited Service; or <i>For those participants hired on or before October 1, 2004 with the City of Boca Raton:</i> Age 55 with at least 15 years of Credited Service; or Age 65 with at least 10 years of Credited Service <i>For all other participants:</i> Age 55 with at least 20 years of Credited Service; or Age 65 with at least 10 years of Credited Service
------------------------	---

- **Amount**

Monthly Accrued Benefit

- **Form of Payment**

Actuarially increased single life annuity (optional);
10-year certain and life annuity (normal form of payment);
Actuarially reduced 50% joint and contingent annuity (optional);
Actuarially reduced 66²/₃% joint and contingent annuity (optional);
Actuarially reduced 75% joint and contingent annuity (optional);
Actuarially reduced 100% joint and contingent annuity (optional);
Any other actuarially equivalent form of payment approved by the Board; or
Actuarially equivalent lump sum distribution (automatic if the single sum value of the participant's benefit is less than or equal to \$5,000 or the monthly annuity is less than \$100)

(Note: A participant may change his joint annuitant up to two times after retirement.)



Summary of Plan Provisions

Table V-A

(continued)

3. Early Retirement Age and Benefit

- **Age**
Age 50 with at least 20 years of Credited Service
- **Amount**
Monthly Accrued Benefit (payable at Normal Retirement Age); or
Monthly Accrued Benefit reduced by 5% for each year by which the participant's Early Retirement Date precedes his Normal Retirement Date (payable at Early Retirement Age)
- **Form of Payment**
Same as for Normal Retirement

4. Service Incurred Disability Eligibility and Benefit

- **Eligibility**
The participant is eligible if his disability was incurred during the course of his employment with the Housing Authority.
- **Condition**
The Board must find that the participant has a physical or mental condition resulting from bodily injury, disease, or a mental disorder which renders him incapable of employment with the Housing Authority.
- **Amount Payable**
Monthly Accrued Benefit
- **Form of Payment**
Single life annuity

5. Non-Service Incurred Disability Eligibility and Benefit

No benefit is provided other than the Early or Normal Retirement Benefit.

6. Delayed Retirement Age and Benefit

- **Age**
After Normal Retirement Age
- **Amount**
Monthly Accrued Benefit
- **Form of Payment**
Same as for Normal Retirement



Summary of Plan Provisions

Table V-A

(continued)

7. Deferred Vested Benefit

- **Age**
Any age with at least 10 years of Credited Service *(Three former employees who lost their position due to the sale of Banyan Place are fully vested in their accrued benefit under the plan regardless of their service.)*
- **Amount**
Monthly Accrued Benefit (payable at Normal Retirement Age); or
Monthly Accrued Benefit reduced by 5% for each year by which the participant's Early Retirement Date precedes his Normal Retirement Date (payable at Early Retirement Age)
- **Form of Payment**
Same as for Normal Retirement

8. Pre-Retirement Death Benefit

In the case of the death of a vested participant prior to retirement, his beneficiary will receive the participant's Monthly Accrued Benefit payable for 10 years beginning on the participant's early or normal retirement date. In the case of the death of a non-vested participant prior to retirement, his beneficiary will receive the participant's Accumulated Contributions in lieu of any other benefits payable from the plan.

9. Average Final Compensation

Average of the highest five years of Compensation (or career average, if higher); for the Division 1 participant, the terms of the employment contract call for an Average Final Compensation based on the last year of Credited Service.

10. Compensation

Total compensation paid by the employer for services rendered, excluding sick payout to the participant at retirement, bonuses, and vacation payout to the participant at employment termination; annual compensation in excess of \$200,000 (as indexed) is excluded in accordance with IRC §401(a)(17).

11. Credited Service

The elapsed time from the participant's date of hire until his date of termination, retirement, or death, provided that the participant transfers or purchases his prior service with the Boca Raton Housing Authority, under the City of Boca Raton General Employees Retirement Plan, or under the City of Boca Raton Management Employees Retirement Plan, as applicable.



Summary of Plan Provisions

Table V-A

(continued)

12. Participation Requirement

Prior full-time employees of the City of Boca Raton who became employees of the Boca Raton Housing Authority as of October 1, 2004 are designated as "Division 1, 2, or 3"; all other employees of the Boca Raton Housing Authority are designated as "Group C".

13. Accumulated Contributions

The Employee Contributions accumulated with interest at the rate of 5.00% per annum; if the participant terminates his employment with less than 10 years of Credited Service, he receives his Accumulated Contributions in lieu of any other benefits payable from the plan.

12. Participant Contribution

6.00% of earnings (for Division 1 participants, 9.00% of earnings; for Division 2 participants, 8.00% of earnings; for Division 3 participants, 7.00% of earnings)

13. Definition of Actuarially Equivalent

Based on 7.00% interest per annum and the unisex mortality table promulgated by the Internal Revenue Service (IRS) for purposes of Internal Revenue Code (IRC) section 417(e)(3).

14. Plan Effective Date

October 1, 2004

15. Automatic Annual Cost-of-Living Adjustment

Division 1 participants receive an automatic 2.00% annual cost-of-living adjustment for all retirement payments made at least two years after retirement; Division 2 participants receive an automatic 1.50% annual cost-of-living adjustment for all retirement payments made at least five years after retirement.



Summary of Plan Amendments

Table V-B

No significant plan changes were adopted since the completion of the previous valuation.

The following additional plan amendments were adopted during the past 10 years and were reflected in prior valuation reports:

- (1) *Resolution 2014-19 was adopted to be effective November 1, 2014. This resolution added a 10-year service requirement for normal retirement eligibility at age 65.*
- (2) *Resolution 2014-07 was adopted to be effective January 31, 2014. This resolution eliminated the service requirement for vesting with respect to three former employees who lost their position due to the sale of Banyan Place.*
- (3) *Effective October 1, 2011, the definition of actuarial equivalence was changed from a 7.50% interest rate and the 1994 Group Annuity Reserving Table, projected to 2002 by Scale AA, to a 7.50% interest rate and the unisex mortality table promulgated by the IRS for purposes of IRC section 417(e)(3). This change had no actuarial impact on the plan.*

