



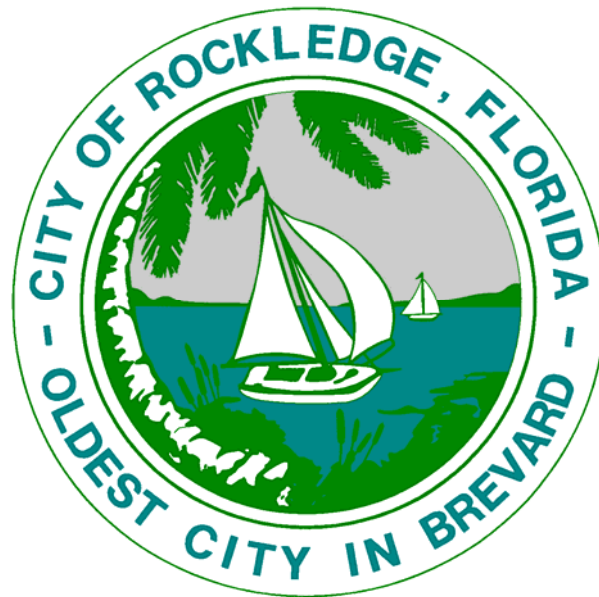
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City of Rockledge

Fire Employees Retirement Plan

Actuarial Valuation as of October 1, 2016



February 14, 2017

REPORT TO DETERMINE MINIMUM FUNDING REQUIREMENTS
FOR THE PLAN AND FISCAL YEAR
BEGINNING OCTOBER 1, 2016 AND 2017



February 14, 2017

Board of Trustees
City of Rockledge Fire Employees Retirement Plan
Rockledge, Florida

RE: Actuarial Valuation as of October 1, 2016

Dear Board Members:

We are pleased to present the actuarial valuation as of October 1, 2016 for the City of Rockledge Fire Employees Retirement Plan (the Plan). This report provides a review of the current funded status of the Plan, establishes the minimum funding requirements for the fiscal years ending September 30, 2017 and 2018, and provides an analysis of experience since the last valuation. In addition to providing the summary and derivation of actuarial findings, this report describes the data, assumptions, and methods used to create these results.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

Statement by Enrolled Actuary:

"This actuarial valuation and/or cost determination was 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, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, 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 increase in plan costs or required contribution rates have been taken into account in the valuation."

We look forward to the presentation of these results to you in person and we are always available to answer any questions you may have.

Sincerely,

A handwritten signature in black ink, appearing to read 'Chad M. Little'.

Chad M. Little, ASA, EA
Partner, Consulting Actuary
Enrollment Number 14-6619

A handwritten signature in black ink, appearing to read 'Paula C. Freiman'.

Paula C. Freiman, ASA, EA
Partner, Consulting Actuary
Enrollment Number 14-5796

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Section

1

Board Summary

A summary of the key valuation findings are compared with the results of the prior valuation below.

Summary of Principal Valuation Results

Fiscal Year Ending September 30,	2016	2017	2018
Minimum Funding Requirements			
<u>As a Dollar Amount</u>			
Estimated Minimum Required City Contribution	\$371,170	\$417,838	\$469,389
Estimated State Contribution	<u>173,333</u>	<u>154,239</u>	<u>154,239</u>
Total Minimum Funding Requirement (City plus State)	\$544,503	\$572,077	\$623,628
<u>As a Percent of Valuation Payroll</u>			
Estimated Minimum Required City Contribution	26.01%	27.34%	31.59%
Estimated State Contribution	<u>12.14%</u>	<u>10.09%</u>	<u>10.38%</u>
Total Minimum Funding Requirement (City plus State)	38.15%	37.43%	41.97%

Note: \$572,077 is the minimum funding requirement for fiscal 2017 including both contributions from the City and those from the State of Florida. We have estimated the City portion as \$417,838 where we solved for the remaining employer contribution which must be deposited on March 1, 2017 as \$59,639.37. The annual contribution paid by the City should take into account the actual amount of premium tax revenues received from the State of Florida so that total minimum funding deposited to the Plan for fiscal 2017 is \$572,077.

\$623,628 is the minimum funding requirement for fiscal 2018 including both contributions from the City and those from the State of Florida. We have estimated the City portion as \$469,389 which must be deposited on December 15, 2017. The annual contribution paid by the City should take into account the actual amount of premium tax revenues received from the State of Florida so that total minimum funding deposited to the Plan for fiscal 2018 is \$623,628.

Funded Status

Valuation as of October 1,	2015	2016	2016
Accrued Liability (AL)	\$13,673,735	\$14,425,910	\$14,425,910
Actuarial Value of Assets	<u>(10,293,985)</u>	<u>(10,779,413)</u>	<u>(10,779,413)</u>
Unfunded Accrued Liability (UAL)	\$3,379,750	\$3,646,497	\$3,646,497
Funded Percentage	75.28%	74.72%	74.72%

Key Assumptions

Valuation as of October 1,	2015	2016	2016
Assumed Investment Return, Net of Expenses	8.00%	7.90%	7.90%
Salary Increase Assumption	6.00%	6.00%	6.00%

Summary of Significant Events

Determination of the funded status of the Plan and minimum funding requirements are based on funding policy, participant data, asset information, Plan provisions, actuarial methods and assumptions, as well as contributions made to the Plan by the State of Florida. Any significant events associated with these items are discussed in the following.

In preparing our report we relied, without audit, on information (some oral and some written) supplied by the Plan Administrator and the City. This information includes, but is not limited to, statutory provisions, employee census, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

City Policy Contribution

We understand that the City policy had been to contribute 15.0% of pensionable pay at the same time member contributions were deposited to the fund on a bi-weekly basis. However, a contribution on this basis does not result in funding the minimum required contribution and have noted there is a \$259,965 contribution receivable for fiscal 2016, of which \$105,726 were City contributions. After discussions with the City, we received confirmation that the employer contribution receivable for fiscal 2016 has been deposited, with interest, on February 2, 2017.

At the request of the City we have determined the remaining employer contribution payable to the Plan for fiscal 2017 on March 1, 2017 based on actual employer contributions deposited so far this fiscal year and the results of this actuarial valuation. The amount which must be deposited to the Plan on March 1, 2017 is \$59,639.37, as shown in the following information which is the basis for the results for fiscal 2017 shown on page 1:

Contribution From	Deposit Date	Deposit	Time to 10/01/17	Interest	Total
Employees (Expected)	04/01/17	\$106,998.00	0.5000	\$4,226.42	\$111,224.42
State (Expected)	10/01/17	154,239.00	0.0000	0.00	154,239.00
City	10/14/16	10,487.18	0.9644	798.99	11,286.17
City	10/28/16	10,658.70	0.9260	779.73	11,438.43
City	11/11/16	10,664.55	0.8893	749.23	11,413.78
City	11/25/16	10,756.75	0.8509	723.08	11,479.83
City	12/09/16	10,717.61	0.8114	687.01	11,404.62
City	12/23/16	10,759.63	0.7731	657.14	11,416.77
City	02/08/17	294,154.64	0.6475	15,046.75	309,201.39
City	03/01/17	<u>59,639.37</u>	0.5833	<u>2,748.22</u>	<u>62,387.59</u>
Total		\$679,075.43		\$26,416.57	\$705,492.00
Total City Contributions		\$417,838.43			

Note that the State contribution is estimated as \$154,239. If the actual amount received for fiscal 2017 is less than this figure, the City must contribute the difference. If the State contribution is more than expected the City may choose to treat a portion of fiscal 2017 contributions as prepaid contributions for fiscal 2018.



Note that the table in Section 2 of this report called “Minimum Funding Requirements” derives the minimum required contribution payable by the City as \$424,521 for fiscal 2017. This is the amount computed prior to the above method change which is payable on a quarterly basis during fiscal 2017. There is a time-value-of-money savings for contributing required funding faster than on a quarterly basis as shown in the above table. Contributing faster than expected saves \$6,683 for fiscal 2017.

It is common for public pension funds to project contributions to the next fiscal year when determining the minimum required funding for a plan. “Projected contributions” means that the October 1, 2016 actuarial valuation is the basis for determination of funding required for fiscal 2018, then the October 1, 2017 actuarial valuation will be the basis for determination of the funding required for fiscal 2019, and so on. Performing actuarial valuations with projected contributions gives the City the opportunity to have more notice to plan for how much will be required to fund a plan. We have been asked to determine minimum required funding for fiscal 2018 on a projected basis from this October 1, 2016 valuation payable in a single sum on December 15, 2017, as shown on page 1.

Participant Data

During the year active membership changed from 32 to 33 members due to 5 new hires, 1 non-vested termination, 1 vested termination, 1 retirement, and 1 DROP entrant. The following provides a summary comparing the actual and expected pay increases for the 12 month periods ending on the date specified.

Year Ended September 30,	Individual		Total Payroll Increase
	Actual	Expected	
2016	5.8%	6.0%	7.1%
2015	6.4%	6.0%	0.8%
2014	4.7%	6.0%	8.9%
2013	3.4%	6.0%	(8.4%)
2012	(3.0%)	6.0%	(2.6%)
2011	3.0%	6.0%	(10.9%)
2010	1.6%	6.0%	(12.4%)
2009	5.3%	6.0%	0.7%
2008	4.2%	6.0%	2.6%
2007	9.7%	6.0%	6.4%
Average:	4.1%	6.0%	(1.0%)

Total payroll decreased 1% on average over the last 10 years. Level dollar amortization is already in place for the amortization of unfunded accrued liability.

Overall, there was a small demographic gain. Should a pattern of consistent gains or losses develop, assumptions will be adjusted as needed. We recommend a review of actuarial experience be conducted.

Assets

The investment return on the Market Value of Assets was 9.14% and the return on the Actuarial Value of Assets was 6.98%, each in comparison to the 8.0% rate of return assumed for the fiscal year ending September 30, 2016.

Because the return on the Actuarial Value of Assets was less than the assumed rate of net investment return, there was an actuarial investment loss for the year ending September 30, 2016.

Note only a portion of actual investment gains or losses are recognized in the current year Actuarial Value of Assets with the remainder recognized over the next four years. Even if all assumptions are realized in



the next several years, the Plan will experience changes in the required contribution rate until prior gains and losses are fully recognized.

The table below provides a comparison of the investment return on the Market Value of Assets and the Actuarial Value of Assets in comparison to the investment return assumed in the valuation of the Plan.

12-Month Period Ended September 30,	% Market Return	% Actuarial Return	% Assumed Return
2016	9.14 %	6.98 %	8.0 %
2015	0.23 %	4.67 %	8.0 %
2014	8.75 %	7.19 %	8.0 %
2013	8.07 %	5.85 %	8.0 %
2012	11.41 %	1.26 %	8.0 %
2011	(2.67%)	0.92 %	8.0 %
2010	7.82 %	1.69 %	8.0 %
2009	1.44 %	1.17 %	8.0 %
2008	(13.93)%	(14.42)%	8.0 %
2007	9.61 %	9.89 %	8.0 %
Average	3.70 %	2.31 %	8.0 %

Investment returns less than the assumed rate of return result in increased annual minimum required contributions in the future.

The Board of Trustees has directed us to revise the net assumed return on investments from 8.0% used in the October 1, 2015 actuarial valuation of the Plan to 7.9% for this October 1, 2016 actuarial valuation based on their revised expectation of the future.

Plan Provisions

Ordinance 1687-2016 was adopted May 4, 2016 to eliminate the option of annuity payments from DROP distributions. An impact statement dated March 4, 2016 indicated this ordinance is not anticipated to have a material impact on the liability of the Plan.

Methods

As described under the paragraph entitled "City Policy Contribution", the employer contribution payable for fiscal 2017 has been determined based on the results of this October 1, 2016 actuarial valuation, actual employer funding deposited to the fund so far this fiscal year, and an amount which must be deposited on March 1, 2017 to complete employer funding for fiscal 2017.

This October 1, 2016 actuarial valuation is also the basis for determination of the employer contribution required for fiscal 2018. The required employer funding figure determined must be deposited on December 15, 2017.

Assumptions

The Board of Trustees has sole authority to determine the actuarial assumptions used for the valuation.



The Board of Trustees has directed us to revise the net assumed return on investments from 8.0% used in the October 1, 2015 actuarial valuation of the Plan to 7.9% for this October 1, 2016 actuarial valuation based on their revised expectation of the future.

The mortality table was the RP-2000 Combined Mortality Table where Scale AA was applied to reflect mortality improvements to the valuation year. The mortality table has been revised to the mortality assumption used for special risk employees in the valuation of the Florida Retirement System (FRS) as of July 1, 2015, as required by state statute. The mortality rates are as follows:

Healthy mortality:	Males:	10% RP-00 Annuitant White Collar + 90% RP-00 Annuitant Blue Collar
	Females:	100% RP-00 Annuitant White Collar
	Both male and female rates fully generational using Scale BB	
Disabled mortality:	Males:	60% RP-00 Disabled Retiree Set Back 4 Years + 40% RP-00 Annuitant White Collar
	Females:	60% RP-00 Disabled Retiree Set Forward 2 Yrs + 40% RP-00 Annuitant White Collar
	No mortality improvement is assumed for disabled lives.	

State Contributions

There have been significant changes in state law related to the use of premium tax revenues. Florida Statutes Section 175.131(1) states changes become effective upon entering into a Collective Bargaining Agreement (CBA) on or after July 1, 2015.

The current International Association of Firefighters Local 3138 CBA was ratified by the bargaining unit on October 21, 2015 and approved by the Rockledge City council on November 4, 2015. The agreement is set to expire September 30, 2018. This agreement states in Section 15 "...by mutual consent both parties agree that all funds received from the State of Florida Insurance Fund will be used exclusively for the benefit of the current firefighters retirement fund for fiscal years 2015, 2016, and 2017...." The Plan attorney has indicated the valuation should be performed assuming all premium tax contributions should be used toward the actuarially required contributions.

The Estimated Minimum Required City Contribution shown on page 1 assumes that the premium tax money received from the State will be in the same amount received in the prior year. Should the amount received in the fiscal year ending September 30, 2017 or 2018 be less than expected, the City will need to contribute any potential shortfall to the Plan.

Section 2 Results Derivation

In this section, the assets and liabilities of the Plan are shown in detail. Assets and liabilities are then compared to determine the funded status and minimum funding requirements.

While asset information is based on the fair market value of assets, along with any techniques used to smooth out market fluctuations, liabilities are determined through a combination of the benefit provisions, participant census data which contains information for the members who will receive those benefits, and the methods and assumptions used with regard to how benefits will be paid to members. A summary of participant data, an outline of the benefit provisions, and a description of the methods and assumptions used in this valuation are described in Section 4.

Financial Information

Over the life of the Plan, the majority of assets are typically generated from investment return. In this section, we describe how the assets of the Plan are invested, show how the actuarial value of assets is derived, and review the investment results since the prior valuation.

Investment Allocation

Valuation Date	October 1, 2015		October 1, 2016	
Stocks	\$6,503,927	67%	\$7,369,630	70%
Fixed Income Securities	2,785,857	28%	2,095,815	20%
Cash and Cash Equivalents	240,796	2%	193,023	2%
Real Estate	0	0%	522,071	5%
Net Receivables	<u>259,534</u>	<u>3%</u>	<u>269,453</u>	<u>3%</u>
Fair Market Value of Assets	\$9,790,114	100%	\$10,449,992	100%

Reconciliation of Market Value of Assets

Year Ending September 30,	2015	2016
1. Market Value of Assets at Beginning of Year		
a. Prior Year Ending Balance	\$10,087,057	\$9,790,114
b. Adjustment to Beginning Value	<u>(79,000)</u>	<u>0</u>
c. Market Value of Assets Beginning of Year	\$10,008,057	\$9,790,114
2. Contributions		
a. Employer	\$362,979	\$390,264
b. State	173,333	154,239
c. Plan Members	<u>100,309</u>	<u>104,923</u>
d. Total Contributions	\$636,621	\$649,426
3. Investment Income		
a. Realized Appreciation (Depreciation)	\$(8,512)	\$29,385
b. Unrealized Appreciation (Depreciation)	(201,010)	667,088
c. Interest plus Dividends	254,634	236,994
d. Investment Expense	<u>(22,015)</u>	<u>(48,722)</u>
e. Net Investment Income	\$23,097	\$884,745
4. Deductions		
a. Benefits	\$(428,914)	\$(518,370)
b. Refund of Contributions	(84,308)	(9,260)
c. DROP Balance Disbursement	(293,161)	(287,383)
d. Administrative Expense	<u>(71,278)</u>	<u>(59,280)</u>
e. Total Deductions	\$(877,661)	\$(874,293)
5. Net Increase	<u>\$(217,943)</u>	<u>\$659,878</u>
6. Market Value of Assets at End of Year	\$9,790,114	\$10,449,992
7. Return on Market Value of Assets = 2I / (A + B - I)	0.23 %	9.14 %

Development of Actuarial Value of Assets

The Market Value of Assets is adjusted to recognize investment earnings greater than (or less than) the assumed net investment return over a five-year period. The Actuarial Value of Assets is no more than 120% and no less than 80% of the Market Value of Assets.

1.	Market Value of Assets as of October 1, 2016			\$10,449,992
2.	Phase-In Gains (Losses) Over Five Year Period			
	<u>Year Ending</u>	<u>Original Gain (Loss)</u>	<u>Percent Unrecognized</u>	<u>Unrecognized Gain (Loss)</u>
a.	September 30, 2016	\$116,700	80%	\$93,360
b.	September 30, 2015	(760,973)	60%	(456,584)
c.	September 30, 2014	77,873	40%	31,149
d.	September 30, 2013	13,270	20%	<u>2,654</u>
e.	Total			\$(329,421)
3.	Preliminary Actuarial Value of Assets			\$10,779,413
4.	Corridor Around Market Value			
a.	Minimum = 80% of Market Value of Assets			\$8,359,994
b.	Maximum = 120% of Market Value of Assets			\$12,539,990
c.	Corridor Adjustment to Preliminary Actuarial Value			\$0
5.	Actuarial Value of Assets as of October 1, 2016			\$10,779,413

Development of Historical Gain or Loss on Market Value of Assets

Fiscal Year End	2016	2015
1. Market Value of Assets - Beginning of Year	\$9,790,114	\$10,008,057
2. Expected Interest on Assets	783,209	800,645
3. Contributions	649,426	636,621
4. Benefit Payments + Administrative Expenses	(874,293)	(877,661)
5. Interest on items (3) and (4)	<u>(15,164)</u>	<u>(16,575)</u>
6. Expected Value of Assets at End of Year	\$10,333,292	\$10,551,087
7. Market Value of Assets - End of Year	\$10,449,992	\$9,790,114
8. Gain (Loss) for Plan Year = (7) - (6)	\$116,700	\$(760,973)

Fiscal Year End	2014	2013
1. Market Value of Assets - Beginning of Year	\$9,600,740	\$8,568,635
2. Expected Interest on Assets	768,059	685,491
3. Contributions	665,730	609,213
4. Benefit Payments + Administrative Expenses	(1,004,398)	(281,807)
5. Interest on items (3) and (4)	<u>(20,947)</u>	<u>5,938</u>
6. Expected Value of Assets at End of Year	\$10,009,184	\$9,587,470
7. Market Value of Assets - End of Year	\$10,087,057	\$9,600,740
8. Gain (Loss) for Plan Year = (7) - (6)	\$77,873	\$13,270

Historical Asset Values

<u>Year Ending September 30,</u>	<u>Actuarial Value of Assets</u>	<u>Market Value of Assets</u>	<u>% Market Return</u>	<u>% Actuarial Return</u>	<u>% Assumed Return</u>
2016	\$10,779,413	\$10,449,992	9.14 %	6.98 %	8.00 %
2015	10,293,985	9,790,114	0.23 %	4.67 %	8.00 %
2014	10,070,624	10,087,057	8.75 %	7.19 %	8.00 %
2013	9,298,953	9,600,740	8.07 %	5.85 %	8.00 %
2012	8,466,891	8,568,635	11.41 %	1.26 %	8.00 %
2011	8,065,659	7,408,817	(2.67%)	0.92 %	8.00 %
2010	7,819,188	7,354,559	7.82 %	1.69 %	8.00 %
2009	7,426,015	6,551,286	1.44 %	1.17 %	8.00 %
2008	7,042,077	6,117,865	(13.93)%	(14.42)%	8.00 %
2007	6,636,445	6,856,342	9.61 %	9.89 %	8.00 %

Historical Contribution Amounts

<u>Year Ending September 30,</u>	<u>Employer</u>	<u>State</u>	<u>Members</u>	<u>Total</u>
2016	\$390,264	\$154,239	\$104,923	\$649,426
2015	362,979	173,333	100,309	636,621
2014	381,796	185,014	98,920	665,730
2013	325,124	178,961	105,128	609,213
2012	269,266	175,451	109,945	554,662
2011	256,606	169,439	111,309	537,354
2010	119,320	162,886	119,320	401,526
2009	131,410	258,987	131,410	521,807
2008	130,288	123,083	130,288	383,659
2007	127,468	181,651	127,468	436,587

Historical Deductions from Fund

<u>Year Ending September 30,</u>	<u>Benefits</u>	<u>Refunds</u>	<u>Administrative Expense</u>	<u>Total</u>
2016	\$805,753	\$9,260	\$59,280	\$874,293
2015	722,075	84,308	71,278	877,661
2014	936,323	0	68,075	1,004,398
2013	193,660	21,167	66,980	281,807
2012	184,815	43,270	28,737	256,822
2011	231,470	0	52,247	283,717
2010	75,850	0	45,978	121,828
2009	141,441	6,605	31,198	179,244
2008	37,144	74,227	39,755	151,126
2007	37,144	37,073	42,621	116,838



FREIMAN LITTLE ACTUARIES

Historical State Contributions

Year Ending September 30	State Contributions		
	Regular	Supplemental	Total
2016	\$133,157	\$21,082	\$154,249
2015	135,220	38,113	173,333
2014	133,388	51,626	185,014
2013	134,063	44,898	178,961
2012	133,555	41,896	175,451
2011	138,034	31,405	169,439
2010	129,388	33,498	162,886
2009	125,721	133,266	258,987
2008	123,083	0	123,083
2007	114,831	66,820	181,651
2006	110,777	26,327	137,104
2005	107,444	14,272	121,716
2004	96,823	9,247	106,070
2003	89,380	2,684	92,064
2002	86,480	0	86,480
2001	75,807	0	75,807
2000	74,000	0	74,000
1999	69,146	0	69,146
1998	59,994	0	59,994

Present Value of Benefits

Valuation as of October 1,	2015	2016
1. Active Members		
a. Retirement Benefits	\$6,326,664	\$5,967,691
b. Deferred Benefits	285,166	296,169
c. Survivor Benefits	79,865	240,886
d. Disability Retirement	<u>154,633</u>	<u>162,848</u>
e. Total for Active Members	\$6,846,328	\$6,667,594
2. Inactive Members		
a. Retired Members	\$8,668,568	\$9,813,895
b. Terminated members	109,066	62,629
c. Beneficiaries	150,114	154,215
d. Disability Retirement	<u>74,608</u>	<u>79,788</u>
e. Total for Inactive Members	\$9,002,356	\$10,110,527
3. Present Value of Benefits	\$15,848,684	\$16,778,121

Accrued Liability

Valuation as of October 1,	2015	2016
1. Active Members		
a. Retirement Benefits	\$4,553,727	\$4,117,529
b. Deferred Benefits	6,702	12,547
c. Survivor Benefits	37,883	110,995
d. Disability Retirement	<u>73,067</u>	<u>74,312</u>
e. Total for Active Members	\$4,671,379	\$4,315,383
2. Inactive Members		
a. Retired Members	\$8,668,568	\$9,813,895
b. Terminated members	109,066	62,629
c. Beneficiaries	150,114	154,215
d. Disability Retirement	<u>74,608</u>	<u>79,788</u>
e. Total for Inactive Members	\$9,002,356	\$10,110,527
3. Accrued Liability	\$13,673,735	\$14,425,910

Normal Cost

Valuation as of October 1,		2015	2016
1.	Preliminary Normal Cost		
a.	Retirement Benefits	\$201,351	\$215,974
b.	Deferred Benefits	31,003	32,572
c.	Survivor Benefits	4,837	15,496
d.	Disability Retirement	<u>9,534</u>	<u>10,650</u>
e.	Total	\$246,725	\$274,692
2.	Total Normal Cost		
a.	Preliminary Normal Cost	\$246,725	\$274,692
b.	Estimated Administrative Expense	<u>71,278</u>	<u>59,280</u>
c.	Total Normal Cost	\$318,003	\$333,972
d.	Total Normal Cost as a Percent of Pay	22.3%	21.8%
3.	Employer Normal Cost		
a.	Preliminary Normal Cost	\$246,725	
b.	Actual Administrative Expense	59,280	
c.	Actual Employee Contributions	<u>(104,923)</u>	
d.	Employer Normal Cost	\$201,082	
4.	Valuation Payroll	\$1,427,401	\$1,528,548

Unfunded Accrued Liability

Derivation of Unfunded Accrued Liability (UAL)

Unfunded Accrued Liability

1. Accrued Liability	\$14,425,910
2. Actuarial Value of Assets	<u>(10,779,413)</u>
3. Unfunded Accrued Liability	\$3,646,497

Determination of Expected Unfunded Accrued Liability

1. Unfunded Accrued Liability as of Prior Year	\$3,379,750
2. Interest for a full year on (1)	270,380
3. Employer Normal Cost (Including Administrative Expenses) as of Prior Year	201,082
4. Interest for a full year on (3)	16,087
5. City Plus State Contribution	(544,503)
6. Interest on Contribution for Time on Deposit	(15,611)
7. Change in Plan, Methods or Assumptions	<u>307,379</u>
8. Expected Unfunded Accrued Liability	\$3,614,564

Calculation of (Gain) or Loss

1. Actual Unfunded Accrued Liability	\$3,646,497
2. Expected Unfunded Accrued Liability	<u>3,614,564</u>
3. Total (Gain) or Loss	\$31,933

Reconciliation of Unfunded Accrued Liability

1. Unfunded Accrued Liability as of Prior Year	\$3,379,750
2. Total Change in Unfunded Accrued Liability	
a. Expected Change in Unfunded Accrued Liability	\$(72,565)
b. Change in Plan, Methods or Assumptions	307,379
c. Change Due to (Gain) or Loss	
i. Portion of (Gain) / Loss Due to Investments	\$98,060
ii. Portion of (Gain) / Loss Due to Demographic Experience	<u>(66,127)</u>
iii. Total (Gain) or Loss	\$31,933
d. Total Change in Unfunded Accrued Liability	\$266,747
3. Unfunded Accrued Liability	\$3,646,497

Amortization of Unfunded Liability

The Unfunded Actuarial Accrued Liability is being amortized as a level dollar amount based on the interest assumption. Changes in the Unfunded Actuarial Accrued Liability due to plan changes, assumption changes, method changes, or gains and losses are all amortized over a 25 year period.

Amortization Bases

	Effective 10/1	Source	Original Balance	Remaining Balance	Adjusted Remaining Balance	Years Remain	Level \$ Amortization
1.	2005	Method Change	\$712,901	\$621,232	\$616,685	19	\$59,085
2.	2006	Actuarial Gain	(389,008)	(338,069)	(335,595)	20	(31,443)
3.	2007	Actuarial Loss	146,070	126,302	125,378	21	11,511
4.	2007	Assumption Change	109,095	94,334	93,644	21	8,598
5.	2008	Actuarial Loss	1,281,746	1,100,387	1,092,333	22	98,460
6.	2008	Method Change	(1,048)	(897)	(890)	22	(80)
7.	2008	Method Change	(1,111,615)	(954,327)	(947,342)	22	(85,391)
8.	2009	Actuarial Loss	332,686	283,036	280,964	23	24,904
9.	2010	Actuarial Loss	717,799	604,116	599,694	24	52,348
10.	2011	Actuarial Loss	668,509	563,728	559,602	25	48,170
11.	2011	Assumption Change	436,124	367,766	365,074	25	31,425
12.	2012	Actuarial Gain	(149,835)	(126,847)	(125,919)	26	(10,701)
13.	2012	Asmp/Method Chg	905,104	766,248	760,640	26	64,644
14.	2013	Actuarial Loss	173,126	147,509	146,429	27	12,300
15.	2013	Update Mortality	10,903	9,289	9,221	27	775
16.	2014	Actuarial Experience	(56,425)	(55,328)	(54,923)	28	(4,564)
17.	2014	Update Mortality	11,756	11,527	11,443	28	951
18.	2015	Actuarial Experience	100,723	99,345	98,618	24	8,608
19.	2015	Update Mortality	12,388	12,218	12,129	24	1,059
20.	2016	Actuarial Experience	31,933	31,933	31,933	25	2,749
21.	2016	Assumption Change	307,379	<u>307,379</u>	<u>307,379</u>	25	<u>26,459</u>
Scheduled Amortization Payment							\$319,867
Outstanding Bases				\$3,670,881	\$3,646,497		
Unfunded Accrued Liability				\$3,646,497			



Projected Unfunded Accrued Liability and Amortization Payments

Plan Year Beginning October 1	Total Outstanding Bases	Total Amortization Payment
2016	\$3,646,497	\$319,867
2017	3,589,434	319,868
2018	3,527,861	319,867
2019	3,461,426	319,867
2020	3,389,742	319,867
2021	3,312,395	319,869
2022	3,228,936	319,867
2023	3,138,885	319,868
2024	3,041,720	319,864
2025	2,936,882	319,868
2026	2,823,758	319,865
2027	2,701,701	319,866
2028	2,570,000	319,862
2029	2,427,899	319,867
2030	2,274,566	319,864
2031	2,109,124	319,865
2032	1,930,610	319,861
2033	1,737,999	319,865
2034	1,530,166	319,862
2035	1,305,918	260,780
2036	1,127,704	292,223
2037	901,484	272,114
2038	679,091	259,124
2039	453,144	234,222
2040	236,216	172,207
2041	69,066	63,402
2042	6,111	9,460
2043	(3,613)	(3,613)
2044	0	0

Actions Taken to Reduce Unfunded Actuarial Accrued Liability

The required contributions calculated each year include a payment for the amortization of the unfunded actuarial accrued liability. This payment is designed to reduce the unfunded actuarial accrued liability in an orderly fashion over the next 25 years.



Minimum Funding Requirements

Determination of Required Contribution

Valuation as of October 1, Funding for Year Ending September 30,	2015 2016	2016 2017	2016 2018
1. Minimum Required Contribution			
a. Total Normal Cost	\$318,003	\$333,972	\$333,972
b. Amortization of Unfunded Accrued Liability	<u>294,966</u>	<u>319,867</u>	<u>319,867</u>
c. Beginning of Year Contribution	\$612,969	\$653,839	\$653,839
d. Interest	<u>31,452</u>	<u>31,919</u>	<u>73,800</u>
e. Minimum Required Contribution	\$644,421	\$685,758	\$727,639
f. Percent of Pay	45.15 %	44.86 %	48.97 %
2. Expected Member Contributions			
a. Expected Member Contributions	\$99,918	\$106,998	\$104,011
b. Percent of Pay	7.00 %	7.00 %	7.00 %
3. Expected Contributions from State			
a. Expected State Contribution	\$173,333	\$154,239	\$154,239
b. Percent of Pay	12.14 %	10.09 %	10.38 %
4. City Policy Contribution			
a. City Policy Contribution	\$371,170	\$424,521	\$469,389
b. Percent of Valuation Payroll	26.01 %	27.77 %	31.59 %
5. Valuation Payroll	\$1,427,401	\$1,528,548	\$1,485,877

Note: The actual premium tax distributions for the fiscal years ending September 30, 2017 and 2018 are not yet known. If state contributions are less than expected the City contributions must be increased to make up the difference. The \$424,521 City minimum funding requirement shown above for fiscal 2017 is payable on quarterly basis. This is the same method as used for determination of the minimum funding requirement for fiscal 2016. However, the employer will actually contribute \$417,838 as the minimum funding requirement for fiscal 2017 by solving for the remaining employer contribution which must be deposited March 1, 2017 as \$59,639.37. The \$469,389 minimum funding requirement for fiscal 2018 must be deposited on December 15, 2017. See Section 1 for details.

Reconciliations

Reconciliation of Funded Status

	Unfunded Accrued Liability	Funded Percentage	Change in Unfunded Accrued Liability	Change in Funded Percentage
As of Prior Valuation	\$3,379,750	75.28 %		
Changes in due to:				
Normal Operation of Plan	3,307,185	76.68 %	\$(72,565)	1.40 %
Investment Experience	3,405,245	75.99 %	98,060	(0.69)%
Demographic Experience	3,339,118	76.35 %	(66,127)	0.36 %
Required Mortality Change	3,499,528	75.49 %	160,410	(0.86)%
Change Net Assumed				
Investment Return	3,646,497	74.72 %	<u>146,969</u>	<u>(0.77)%</u>
Total Changes			\$266,747	(0.56)%
As of Current Valuation	\$3,646,497	74.72 %		

Reconciliation of City Minimum Funding Requirement

	Dollar Amount	% of Pay
City Required Contribution for Fiscal 2016	\$371,170	26.01 %
Changes in Contribution due to:		
Normal Operation of Plan	\$(5,156)	0.25 %
Change in State \$	18,330	1.32 %
Change in Expenses	(12,478)	(0.90)%
Investment Experience	8,846	0.64 %
Demographic Experience	7,049	(1.95)%
Required Mortality Change	20,478	1.34 %
Change Net Assumed Investment Return	<u>16,282</u>	<u>1.06 %</u>
Total Changes	\$53,351	1.76 %
City Required Contribution for Fiscal 2017*	\$424,521	27.77 %
Change to Project Contribution Payable for Fiscal 2018	\$56,680	4.62 %
City Contribution Payable on 12/15/17 for Fiscal 2018	<u>(11,812)</u>	<u>(0.80)%</u>
Total Changes	\$44,868	3.82 %
City Required Contribution for Fiscal 2018	\$469,389	31.59 %

*See Section 1. The employer will actually contribute \$417,838 as the minimum funding requirement for fiscal 2017 by solving for the remaining employer contribution which must be deposited March 1, 2017 as \$59,639.37.



Section 3 Accounting Information

Information Required by GASB 67/68

A supplemental report provides information under the Governmental Accounting Standards Board No. 67/68.

Statement of Accumulated Plan Benefits

The following table is based on prior accounting standards and is required by the State. The present value of accrued benefits is an estimate of the liability for all benefits accrued to date.

Valuation as of October 1,	2015	2016
1. Actuarial present value of accumulated benefits		
a. Participants currently receiving benefits	\$8,893,290	\$10,047,898
b. Other participants	<u>3,035,293</u>	<u>2,618,285</u>
c. Vested participants	\$11,928,583	\$12,666,183
d. Nonvested participants	<u>439,908</u>	<u>448,609</u>
e. Total	\$12,368,491	\$13,114,792
2. Change in actuarial present value of accumulated benefits		
a. Actuarial present value of accumulated benefits beginning of year		\$12,368,491
b. Increase (decrease) during year attributable to:		
i. Plan amendment		\$0
ii. Change in assumptions or methods		303,210
iii. Increase for interest and probability of payment due to decrease in discount period and benefits accrued		1,258,104
iv. Benefits paid		(815,013)
v. Other		<u>0</u>
vi. Net increase (decrease)		\$746,301
c. Actuarial present value of accumulated benefits end of year		\$13,114,792

Other Disclosures Required by the State of Florida

Valuation as of October 1,	2015	2016
Present value of active member:		
Future salaries (attained age)	\$12,629,201	\$13,118,607
Future contributions (attained age)	\$884,044	\$918,302
Balance of contributions with interest for actives	\$1,206,338	\$1,074,101



Required Disclosure Under F.S. 112.664(1)

As required under F.S. Section 112.664(1) we have produced the following information:

- (a) Total pension liability calculated based on mortality used in one of the last two Florida Retirement System (FRS) valuations. This actuarial valuation assumes healthy mortality as follows: Male: 10% RP-2000 Annuitant White Collar + 90% RP-2000 Annuitant Blue Collar / Female: 100% RP-2000 Annuitant White Collar, where both the male and female rates are fully generational from 2000 using Scale BB. Disabled mortality is as follows: Male: 60% RP-2000 Disabled Retiree Set Back 4 years + 40% RP-2000 Annuitant White Collar / Female: 60% RP-2000 Disabled Retiree Set Forward 2 Years + 40% RP-2000 Annuitant White Collar, where no mortality improvement is assumed for disabled lives.
- (b) Total pension liability calculated using an assumed interest rate that is 200 basis points lower than that assumed in the valuation of the Plan.
- (c) Determination of the number of months or years for which the current market value of assets is adequate to sustain the payment of expected retirement benefits.
- (d) Recommended contribution to the Plan using the most recent valuation and the contributions necessary prepared pursuant to (a) and (b) stated as a dollar amount and % of payroll.

	2% Decrease (5.90%)	Current Discount Rate (7.90%)	2% Increase (9.90%)
	<u> </u>	<u> </u>	<u> </u>
Total pension liability	\$18,015,926	\$14,425,910	\$11,918,639
Plan fiduciary net position	<u>(10,449,992)</u>	<u>(10,449,992)</u>	<u>(10,449,992)</u>
Net pension liability	<u>\$7,565,934</u>	<u>\$3,975,918</u>	<u>\$1,468,647</u>
 Plan fiduciary net position as a percentage of the total pension liability	 58.00%	 72.44%	 87.68%
 Years of benefit payments:			
Expected for current members:	99	99	99
Paid for with current assets:	12.31	14.64	18.22
 City Plus State Contribution Requirement, Plus Expected Employee Contributions			
Dollar Amount	\$1,056,210	\$685,758	\$388,275
Percent of Payroll	69.10%	44.86%	25.40%

Required Disclosure Under F.S. 112.664(2)(b)2.

F.S. Section 112.664(2)(b)2. - For the previous five years, beginning with 2013, a side-by-side comparison of the plan's assumed rate of return compared to the actual rate of return, as well as the percentages of cash, equity, bond and alternative investments in the plan portfolio.

Year Ending September 30,	2016	2015	2014	2013	2012	2011
Assumed rate of return	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Actual rate of return	9.1%	0.2%	8.7%	8.1%	11.4%	(2.7%)
Percentages of assets in:						
Cash	2%	2%	4%	0%	5%	4%
Equity	70%	67%	65%	58%	60%	56%
Bond	20%	28%	26%	37%	30%	34%
Alternative	8%	3%	5%	5%	5%	6%
Total	100%	100%	100%	100%	100%	100%

Section 4 Supplementary Information

Summary of Participant Data

Member Statistics

Valuation as of October 1,	2015	2016
<u>Active Participants</u>		
Number	32	33
Average Age	38.4	37.6
Average Credited Service	9.6	8.2
Percent Male	93.8	90.9
Average Valuation Salary	\$48,278	\$48,293
Total Valuation Salary	\$1,544,901	\$1,593,672
Payroll Covered in Valuation	\$1,427,401	\$1,528,548
<u>Terminated With Rights to Deferred Benefits</u>		
Number	1	1
Average Age	51.4	37.0
Percent Male	100.0	100.0
Average Monthly Benefit	\$1,126	\$1,931
<u>Retirements (DROP and Service Retirees)</u>		
Number	17	20
Average Age	57.6	57.6
Percent Male	100.0	100.0
Average Monthly Benefit	\$3,413	\$3,279
Total of DROP Account Balances September 30	\$739,462	\$739,532
<u>Beneficiaries</u>		
Number	1	1
Average Age	55.4	56.4
Percent Male	0.0	0.0
Average Monthly Benefit	\$1,120	\$1,120
<u>Disability Retirements</u>		
Number	1	1
Average Age	54.7	55.7
Percent Male	100.0	100.0
Average Monthly Benefit	\$722	\$722

Number of Active Members by Age and Service as of October 1, 2016

Age	Service							Total	
	< 1	< 5	< 10	< 15	< 20	< 25	< 30		< 35
< 25	2	1							3
< 30	2	3							5
< 35	1	3	2						6
< 40	1	1	1	1	1				5
< 45		2	1	2	1				6
< 50		1			1	2	1		5
< 55		1		1			1		3
< 60									
Total	6	12	4	4	3	2	2		33

Active Valuation Pay by Age and Service as of October 1, 2016

Age	Service							Total	
	<1	<5	<10	<15	<20	<25	<30		<35
< 25	34,000	35,495							34,498
< 30	34,000	39,739							37,443
< 35	34,520	39,452	52,840						43,093
< 40	38,000	44,478	48,560	64,168	60,465				51,134
< 45		40,399	48,960	51,222	61,489				48,948
< 50		39,926			67,468	70,742	71,919		64,159
< 55		38,944		70,176			65,124		58,081
< 60									
Total	34,753	39,768	50,800	59,197	63,141	70,742	68,521		48,293

Reconciliation of Plan Participants

	Active	Retired	DROP	Deferred Vested	Disabled	Survivor	Total
October 1, 2015	32	11	6	1	1	1	52
Active							
To Retired	(1)	1					0
To DROP	(1)		1				0
To Deferred Vested	(1)			1			0
To Refund of Contribs	(1)						(1)
DROP							
To Retired		2	(2)				0
Deferred Vested							
To Retired		1		(1)			0
Additions	5	0	0	0	0	0	5
October 1, 2016	33	15	5	1	1	1	56

Outline of Plan Provisions

Plan Type: Single-employer Defined Benefit Pension Plan

Effective Date: November 1, 1969. Amended and restated effective October 1, 1999 and subsequently amended by Ordinance No. 1223-2000, 1336-2004, 1366-2005, 1475-2008, 1492-2008, 1509-2008, 1520-2009, 1545-2010, 1546-2010, 1565-2010, 1566-2010, 1568-2010, 1630-2013, 1643-2014, 1662-2014, 1672-2015, and 1687-2016.

Plan Administrator: The Board of Trustees

Board Composition: Two members are elected from among the fire employees of the City, who are members of the plan, two city residents appointed by the Commission and one person is chosen by a majority of the previous four members.

Funding Requirements: Employer contributions are actuarially determined and subject to State statute. Employee contributions are as described below and may be amended by ordinance.

Plan Year: The 12-month period from October 1st to the next September 30th.

Member: Full-time firefighters participate in the Plan immediately upon hire.

Credited Service: Employee service computed in years and completed calendar months. Military service purchases are allowed.

Vesting: Members become 100% vested after earning 10 years of Credited Service.

Basic Compensation: Total compensation actually paid in a Plan Year by the City including tax deferred compensation and excluding overtime, commissions, bonuses, expense allowances and payment for accrued annual leave, accrued sick leave, and accrued compensatory leave.

Employee Contributions: 7.0% of Basic Compensation credited with 5% interest compounded annually. Members receive benefits under the Plan no less than the value of their accumulated Employee Contributions with interest.

Members who terminate non-vested are entitled to the return of Employee Contributions accumulated with interest at 5% to the first day of the month in which termination occurs.

Average Monthly Compensation: The sum of the highest five successive Plan Years of Basic Compensation in the last ten Plan Years of employment divided by 60.

Normal Retirement Date: The first day of the month coincident with or next following the earlier of attainment of age 52 and 25 years of Credited Service or age 55 and 10 years of Credited Service.

Accrued Benefit: The amount of monthly retirement income payable at the Normal Retirement Date is determined according to the following formulas, but no less than 2% x Average Monthly Compensation x Credited Service. For Members hired before October 1, 2012, the amount of monthly retirement income payable at the Normal Retirement Date is determined according to the following formula:

3% x Average Monthly Compensation x Credited Service up to 25 years

Plus
FLA

FREIMAN LITTLE ACTUARIES

1.5% x Average Monthly Compensation x Credited Service between 25 and 30 years

For Members hired on or after October 1, 2012, the amount of monthly retirement income payable at the Normal Retirement Date is determined according to the following formula:

2.75% x Average Monthly Compensation x Credited Service up to 25 years

Plus

1.25% x Average Monthly Compensation x Credited Service between 25 and 30 years

The Accrued Benefit is payable in the form of a 10-year certain and continuous annuity. However, any member with a spouse shall receive an actuarially equivalent 50% joint and survivor annuity unless the member chooses another Optional Form of Retirement Income with spousal consent.

Members who terminate employment 100% vested prior the Normal Retirement Date are eligible to receive their Accrued Benefit once the age requirements for the Normal Retirement Date are met, provided Employee Contributions remain in the Plan.

Late Retirement Benefit: The amount of monthly retirement income payable to a Member who retires after the Normal Retirement Date is the greater of (i) the monthly retirement income which can be provided by the single-sum value of the Accrued Benefit payable if he had retired at the Normal Retirement Date, accumulated with interest from the Normal Retirement Date to the date the monthly retirement income payments are to commence, and (ii) the monthly retirement income computed as described for the Accrued Benefit using Credited Service and Average Monthly Compensation determined at the Member's actual retirement date.

Early Retirement Date: The first day of the month coincident with or next following the date an employee retires prior to the Normal Retirement Date after the earlier of attainment of age 45 and 25 years of Credited Service or age 50 and 10 years of Credited Service.

Early Retirement Benefit: The Accrued Benefit is reduced for commencement earlier than the Normal Retirement Date at a rate of 0.25% per month. However, the minimum monthly retirement income for a Member who retires before the Normal Retirement Date with 25 years Credited Service is 50% x Average Monthly Compensation.

Members who terminate employment 100% vested prior to reaching the Early Retirement Date age requirements may elect to receive an Early Retirement Benefit once the age requirements are met, provided Employee Contributions remain in the Plan.

Members who terminate employment 100% vested prior the Normal Retirement Date but on or after their Early Retirement Date but do not commence receipt of an Early Retirement Benefit at that time will receive a monthly retirement income not less than the monthly retirement income which can be provided by the single-sum value of the monthly early retirement income which would have been payable if he had retired immediately upon termination, accumulated with interest from termination to the date the monthly retirement income payments are to commence.

Members who recover from Disability Retirement and who were eligible for an Early Retirement Benefit at the date of disability may elect to receive this benefit upon recovery from disability.

Disability Retirement: This benefit is payable from the first day of the month coincident with or next following the date the Retirement Committee approves the Member's Disability Retirement. The benefit is payable in the form of a 10 year certain and continuous annuity. The last payment is that due next



preceding the earlier of (1) the date of recovery prior to the Normal Retirement Date and (2) the later of the date of death or the 120th payment. The amount of monthly retirement income is determined as follows:

(a) Non-Line of Duty: Members with less than 10 years of Credited Service upon disability receive a monthly retirement income which can be provided by the greater of (i) the single-sum value of the Accrued Benefit and (ii) 2 x Basic Compensation paid in the Plan Year immediately preceding disability. The monthly retirement income which can be provided by (ii) is limited to 60% x Anticipated Monthly Retirement Income at the Normal Retirement Date. In no event shall the benefit payable be less than the benefit required under section 175.191 of the Florida Statutes.

(b) Non-Line of Duty: Members with 10 years of Credited Service or more upon disability receive a monthly retirement income which is the greater of (i) the monthly retirement income which can be provided by the single-sum value of the Accrued Benefit and (ii) 30% x Basic Compensation paid in the Plan Year immediately preceding disability where the single-sum value of this monthly amount does not exceed 100 x the Anticipated Monthly Retirement Income at the Normal Retirement Date. In no event shall the benefit payable be less than the benefit required under section 175.191 of the Florida Statutes.

(c) Line of Duty: Members receive a monthly retirement income which is 50% x Basic Compensation paid in the Plan Year immediately preceding disability where the single-sum value of this monthly amount does not exceed 100 x the Anticipated Monthly Retirement Income at the Normal Retirement Date. In no event shall the benefit payable be less than the benefit required under section 175.191 of the Florida Statutes.

Members who recover from disability and re-enter the service of the City within 30 days of recovery will be deemed to have continuous service except that the period beginning with the first month for which Disability Retirement income was received and ending with the date of service re-entry is not considered as Credited Service.

Anticipated Monthly Retirement Income at the Normal Retirement Date: Determined as described for the Accrued Benefit, but instead using Anticipated Credited Service and Anticipated Average Monthly Compensation. Anticipated Credited Service is employee service computed in years and completed calendar months as if the member remains employed to the Normal Retirement Date. Anticipated Average Monthly Compensation is computed assuming that the last complete Plan Year of Basic Compensation is paid in each Plan Year, without change, to the Normal Retirement Date.

Survivor Benefit at Death of Disabled Member Prior to Disability Retirement: The designated beneficiary of a disabled Member who dies prior to receipt of Disability Retirement benefits is eligible to receive a monthly retirement income payable in the form of a 10 year certain and continuous annuity payable commencing on the first of the month coincident with or next following the date of the disabled Member's death. The designated beneficiary will receive a monthly retirement income which can be provided by the greater of (i) the single-sum value of the Accrued Benefit and (ii) 2 x Basic Compensation paid in the Plan Year immediately preceding disability not more than 100 x Anticipated Monthly Retirement Income at the Normal Retirement Date.

Survivor Benefit at Death of Vested Terminated Members: The designated beneficiary of vested Member who dies prior to retirement is eligible to receive a monthly retirement income payable in the form of a 10 year certain and continuous annuity payable commencing on the first of the month coincident with or next following the Member's death, which can be provided by the single-sum value of the Member's Accrued Benefit or Early Retirement Benefit.

Survivor Benefit at Death of Active Employee Prior to Normal Retirement Date: The designated beneficiary of a Member who dies while in active service prior to the Normal Retirement Date is eligible to receive, commencing on the first of the month coincident with or next following the Member's death, a monthly retirement income (payable in the form of a 10 year certain and continuous annuity) which can be provided by the greater of (i) the single-sum value of the Accrued Benefit as of the date of death, not less than the single-sum value of the Early Retirement Benefit which would have been payable if the Member had retired early on the date of death, and (ii) 2 x Basic Compensation paid in the Plan Year immediately preceding death not more than 100 x Anticipated Monthly Retirement Income at the Normal Retirement Date.

Survivor Benefit at Death of Active Employee After Normal Retirement Date: The designated beneficiary of a Member who dies while in active service after the Normal Retirement Date is eligible to receive, commencing on the first of the month coincident with or next following the Member's death, a monthly retirement income (payable in the form of a 10 year certain and continuous annuity) which can be provided by the single-sum value of the Late Retirement Benefit.

Optional Forms of Retirement Income: In addition to the 10 year certain and continuous form of annuity, also available under the terms of the Plan are the life only annuity and the joint and 50%, 66 2/3%, 75%, or 100% survivor annuity. With the joint and survivor options, the member may also elect the pop-up feature. The Plan also allows for other amounts and forms of retirement income that will meet the circumstances of the Participant, in the opinion of the Retirement Committee, and will not substantially affect the actuarial soundness of the Plan.

Deferred Retirement Option Program (DROP): Members are eligible to enter the DROP at the Normal Retirement Date. The Accrued Benefit is frozen and no further Employee Contributions are payable at DROP entry. The Accrued Benefit accumulates with interest in the DROP account and is payable as a single-lump sum (or as an actuarially equivalent annuity) upon DROP exit. The DROP account earns interest at a rate equal to the funds net rate of investment return minus 1% in administration fees, unless the DROP participant, as a one-time irrevocable option, elects a self-directed DROP as approved by the board of trustees. The maximum DROP participation duration is 5 years and participation will end if the employee resigns, dies or is terminated with cause prior to completion of the 5 years.

Description of Assumptions and Methods

Assumed Rate of Investment Return: 7.9% per year, net of investment expenses (changed from 8.0% per year, net of investment expenses used in the prior actuarial valuation)

Inflation: 2.5% per year

Salary Increase – Individual: 6.0% per year

Salary Increase – Total Payroll: Based on individual salary increase assumptions and other decrements assumed in the valuation of Plan liabilities.

Mortality: In the prior valuation, the mortality table was the RP-2000 Combined Mortality Table projected to the valuation year using Scale AA, with the disabled table used for disability retirees.

The mortality table has been revised to the mortality assumption used for special risk employees in the valuation of the Florida Retirement System (FRS) as of July 1, 2015, as required by state statute. The mortality rates are as follows:

Healthy mortality:	Males:	10% RP-00 Annuitant White Collar + 90% RP-00 Annuitant Blue Collar
	Females:	100% RP-00 Annuitant White Collar
		Both male and female rates fully generational using Scale BB
Disabled mortality:	Males:	60% RP-00 Disabled Retiree Set Back 4 Years + 40% RP-00 Annuitant White Collar
	Females:	60% RP-00 Disabled Retiree Set Forward 2 Yrs + 40% RP-00 Annuitant White Collar
		No mortality improvement is assumed for disabled lives.

Retirement: 100% at the earlier of age 55 with 10 years of service or age 52 with 25 years of service.

Termination: Unisex rates based on the experience of the Rockledge firefighters from 1999 through 2005, as follows:

Service	Rate	Service	Rate	Service	Rate	Service	Rate
0	0.2000	7	0.0500	14	0.0175	21	0.0100
1	0.2000	8	0.0250	15	0.0175	22	0.0100
2	0.2000	9	0.0250	16	0.0175	23	0.0100
3	0.2000	10	0.0250	17	0.0150	24	0.0100
4	0.1000	11	0.0200	18	0.0150	>=25	0.0000
5	0.0500	12	0.0200	19	0.0150		
6	0.0500	13	0.0200	20	0.0100		

Disability: Sex distinct rates as used for special risk employees in the Florida Retirement System actuarial valuation report as of July 1, 2005. Linear interpolation has been used between the rates shown in five year age increments, as follows:

Age	Line-of-Duty		Age	Not Line-of-Duty	
	Male	Female		Male	Female
20	0.012%	0.008%	20	0.037%	0.036%
25	0.012%	0.008%	25	0.037%	0.036%
30	0.017%	0.016%	30	0.043%	0.046%
35	0.029%	0.037%	35	0.055%	0.075%
40	0.051%	0.068%	40	0.087%	0.118%
45	0.087%	0.106%	45	0.140%	0.259%
50	0.138%	0.153%	50	0.292%	0.318%
55	0.215%	0.230%	55	0.446%	0.492%
60	0.301%	0.285%	60	0.628%	0.597%
65+	0.231%	0.143%	65+	0.698%	0.380%

Funding Method: Entry Age Normal (level percent of salary)

Glossary of Actuarial Terms

Present Value of Benefits (PVB): The present value, as of the valuation date, of all benefits that will become payable by the Plan for the current group of members in the census.

Normal Cost (NC): The value of the portion of the total benefit for active members which accrues in the year following the valuation date. Under the Entry Age Normal (Level Percent of Salary) funding method, the NC is a constant fraction of salary from the member's date of entry into the Plan to the member's assumed date of termination, retirement, disability or death.

Accrued Liability (AL): This is the portion of the PVB attributable to the past at the valuation date. For active members, AL is the annual NC accumulated from date of entry to the valuation date for each member. For retired and terminated members, the PVB and the AL are equal. The AL is the estimated liability owed by the pension fund at the valuation date.

Unfunded Accrued Liability (UAL): Any excess of the Accrued Liability over the fund assets. A negative UAL indicates fund assets are greater than the Accrued Liability, otherwise known as a surplus.

Actuarial Value of Assets: The value of assets used in the actuarial valuation of the Plan which is compared to the AL to determine the UAL and minimum funding requirements. A method may be used to smooth out short term volatility in the fair market value of assets.