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# City of Fort Collins General Employees' Retirement Plan January 1, 2018 Actuarial Valuation

**Prepared by:**

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Consulting Actuary

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March 9, 2018

Retirement Committee Members  
City of Fort Collins  
215 North Mason Street  
Fort Collins, Colorado 80522

**Re: City of Fort Collins General Employees' Retirement Plan - 2018 Actuary's Report**

Dear Retirement Committee Members:

As requested, we performed an actuarial valuation of the City of Fort Collins General Employees' Retirement Plan as of January 1, 2018, for the plan year ending December 31, 2018. Our findings are set forth in this actuary's report. This report reflects the benefit provisions in effect as of January 1, 2018.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by City staff. This information includes, but is not limited to, plan provisions, participant census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the Plan have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the Plan and reasonable expectations); and which, in combination, offer our best estimate of anticipated experience affecting the Plan. Further, in our opinion, each actuarial assumption used is reasonably related to the experience of the Plan and to reasonable expectations which, in combination, represent our best estimate of anticipated experience under the Plan.

This valuation report is only an estimate of the Plan's financial condition as of a single date. It can neither predict the Plan's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of Plan benefits, only the timing of Plan contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

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. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The Retirement Committee has the final decision regarding the appropriateness of the assumptions and adopted them at their February 2018 meeting.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the Plan. Actuarial computations presented in this report under GASB Statements Nos. 67 and 68 are for purposes of assisting the Plan and Sponsor in fulfilling their financial accounting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Plan's funding requirements and goals and of the plan provisions described in Appendix B of this report. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the use and benefit of the City of Fort Collins General Employees' Retirement Plan ("Plan"). To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception(s):

- (a) The Plan may provide a copy of Milliman's work, in its entirety, to the Plan's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the System.
- (b) The Plan may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuary is independent of the Plan Sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

We respectfully submit the following report, and we look forward to discussing it with you.



Joel E. Stewart, FSA, EA, MAAA  
Consulting Actuary

JES:kea



Katie E. Antoline, ASA, EA, MAAA  
Consulting Actuary

## TABLE OF CONTENTS

	PAGE
<b>EXECUTIVE SUMMARY</b> .....	1
<b>VALUATION RESULTS</b>	
Table 1 Statement of Market Value of Assets .....	5
Table 2 Change in Market Value of Assets .....	6
Table 3 Investment Return .....	7
Table 4 Actuarial Balance Sheet.....	8
Table 5 Unfunded Actuarial Liability .....	9
Table 6 Funding Analysis .....	10
Table 7 Historical Statistics .....	11
Table 8 Twenty-Year Projection of Benefit Payments .....	12
<b>APPENDICES</b>	
<b>A ACTUARIAL PROCEDURES AND ASSUMPTIONS</b> .....	13
<b>B PLAN SUMMARY</b> .....	16
<b>C PARTICIPANT DATA</b> .....	19

## **EXECUTIVE SUMMARY**

Overview

	<b>Actuarial Valuation For Plan Year Beginning</b>	
	<b>January 1, 2017</b>	<b>January 1, 2018</b>
<b>Assets</b>		
Market Value of Plan Assets	\$ 43,869,306	\$ 48,807,729
Return on Market Value of Plan Assets	5.9%	16.4%
<b>Liabilities</b>		
Actuarial Present Value of Future Benefits	\$ 59,794,045	\$ 61,351,183
Actuarial Liability	\$ 58,377,767	\$ 60,025,297
Assumed Average Annual Long-Term Future Investment Return (Discount Rate)	6.50%	6.25%
Normal Cost and Annual Expenses (as a % of Payroll)	\$ 337,415 6.42%	\$ 318,155 6.71%
<b>Unfunded Actuarial Liability (UAL) Relative to:</b>		
Market Value of Plan Assets	\$ 14,508,461	\$ 11,217,568
<b>Funded Ratio Relative to:</b>		
Market Value of Plan Assets	75.15%	81.31%
<b>GASB 67/68 Disclosure Information</b>		
Measurement Date	December 31, 2016	December 31, 2017
Discount Rate for Liabilities	6.50%	6.25%
Total Pension Liability (TPL)	\$ 58,377,767	\$ 60,025,297
Fiduciary Net Position (FNP)	\$ 43,869,306	\$ 48,807,729
Net Pension Liability (NPL)	\$ 14,508,461	\$ 11,217,568
FNP as a % of TPL	75.15%	81.31%
<b>Participant Data</b>		
Active Participants	78	70
Retired Participants and Beneficiaries	238	242
Vested Terminated Participants	94	89
Total Participants	410	401

The Actuarial Present Value of Future Benefits includes the effects of projected future service and pay increases for current active participants, stated in present value terms using the plan's investment return assumption as the discount rate. The Actuarial Accrued Liability is the portion of that amount that is allocated to service already completed as of the valuation date by participants.

## Purpose of this Report

This report has been prepared for the City of Fort Collins General Employees' Retirement Plan as of January 1, 2018 to:

1. Review the experience for the plan year ending December 31, 2017. "Experience" encompasses the performance of the plan's assets during the year and changes in plan participant demographics that impact liabilities.
2. Review the plan's funded ratio.
3. Review the adequacy of plan funding based on the City's current funding policy for the plan.
4. Provide the basis for later financial reporting under Governmental Accounting Standards Board (GASB) Statements Nos. 67 and 68.

## Actuarial Methods and Assumptions

The methods and assumptions used in this valuation are detailed in Appendix A. An annual assumption review was performed based on data through 2017, as documented in our annual assumption review document dated February 7, 2018. The assumptions used in this valuation are based on the recommendations from that report, as approved by the Retirement Committee at their February 8, 2018 meeting.

The plan's long-term investment return assumption was changed from 6.50% to 6.25%, to better anticipate expected future experience. The assumption change increased the calculated Actuarial Liability by \$1.3 million.

## Plan Provisions

The valuation reflects our understanding of the plan provisions in effect as of January 1, 2018. Since the last valuation, our understanding is that the plan provisions have not been amended. Please see Appendix B for a detailed summary of plan provisions.

## Plan Experience

Actuarial gains or losses arise when actual experience differs from actuarial assumptions used in the valuation. During the year ending December 31, 2017, the Plan experienced an overall actuarial gain of approximately \$4.2 million. The actuarial gain can be broken down as follows.

<u>Source of (Gain) or Loss</u>	<u>Amount</u>
Investment experience	\$ (4,248,199)
Demographic experience	<u>21,369</u>
Total (gain)/loss	\$ (4,226,830)

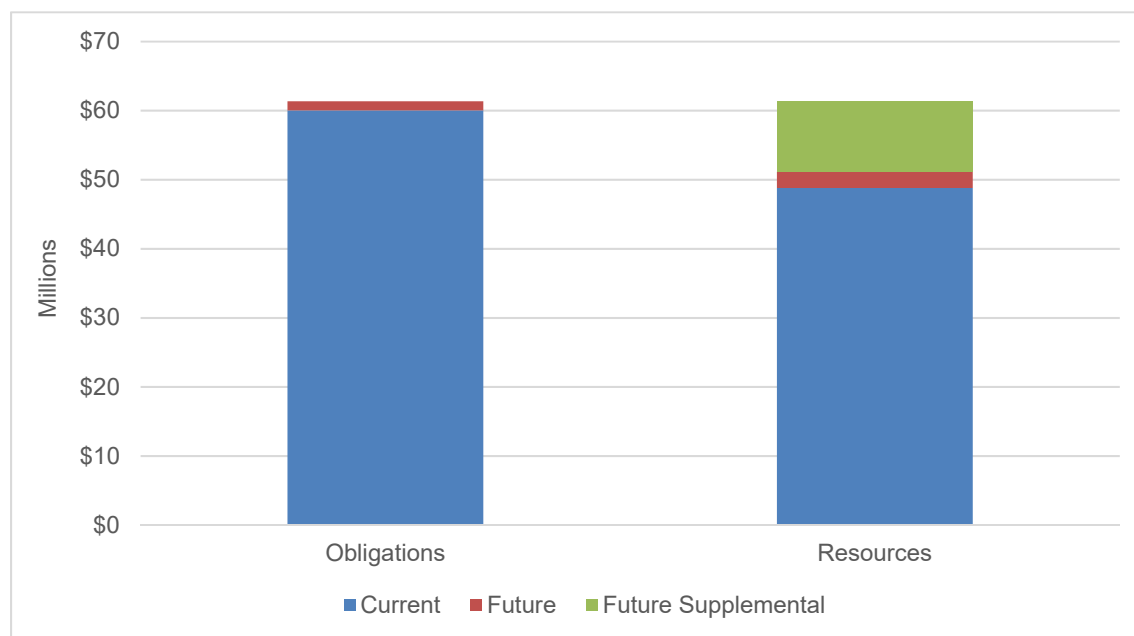
Plan assets returned 16.4% during 2017, exceeding the prior valuation's return assumption of 6.50%, and resulting in a gain of \$4.2 million for the 2017 plan year.

The demographic loss was primarily due to losses on retiree mortality, offset by gains due to salary increases lower than expected. Table 5 contains additional detail on the changes in the unfunded actuarial liability from January 1, 2017 to January 1, 2018.

## Funding Analysis

The City’s current funding policy is to contribute 10.5% of compensation for active plan participants, plus a supplemental contribution necessary for the Plan to remain solvent. The supplemental contribution is currently budgeted at \$1.12 million per year.

The following chart compares the obligations of the Plan to the resources available to pay those obligations. The obligations of the Plan are equal to the present value of all benefits projected to be accrued for all current participants through their anticipated termination date. This includes the present value of benefits attributable to service already completed as of the valuation date (“Current”), also known as the Actuarial Liability, as well as the amounts attributable to projected future service for current active participants (“Future”). The resources of the Plan include the value of the assets set aside to pay for the benefits (“Current”), plus the present value of the future expected contributions for participants in the Plan as of the valuation date (“Future”) equal to 10.5% of projected future compensation plus the supplemental contribution of \$1.12 million per year.



The present value of future benefits is \$61.4 million, versus the current market value of assets of \$48.8 million and the present value of future payroll contributions of \$2.3 million. The shortfall of approximately \$10.3 million is anticipated to be funded through the supplemental contribution. This represents approximately 14 years of the \$1.12 million supplemental contribution as of the actuarial valuation date. Table 6 provides additional analysis on the current funding policy of the City.

If all future experience follows assumptions, there are no changes to assumptions, plan provisions or funding policy, and the policy contributions (including the supplemental contribution) are made each year, the Plan’s funded status should improve. In addition, the declining active participant population should result in declining contributions as the compensation base declines.



## VALUATION RESULTS

**TABLE 1**  
**STATEMENT OF MARKET VALUE OF ASSETS**

	<b>December 31, 2016</b>	<b>December 31, 2017</b>
<b>CASH AND CASH EQUIVALENTS</b>	\$ 886,597	\$ 2,518,092
<b>INVESTMENTS</b>		
US Government Securities	\$ 10,977,304	\$ 10,717,989
Corporate Bonds	1,611,828	1,390,291
Mutual Funds	30,351,668	34,114,235
Total	\$ 42,940,800	\$ 46,222,515
<b>RECEIVABLES</b>		
Employer Contributions	\$ 0	\$ 0
Accrued Interest and Dividends	42,284	67,122
Total	\$ 42,284	\$ 67,122
<b>LIABILITIES</b>		
Expenses and Benefits Payable	\$ 375	\$ 0
Investment Transaction	0	0
Total	\$ 375	\$ 0
<b>TOTAL MARKET VALUE OF ASSETS</b>	<b>\$ 43,869,306</b>	<b>\$ 48,807,729</b>

**TABLE 2**  
**CHANGE IN MARKET VALUE OF ASSETS**

	<b>2016</b>	<b>2017</b>
Market value at end of prior year	\$ 43,050,288	\$ 43,869,306
Income:		
Contributions	\$ 1,720,650	\$ 1,652,786
Interest Income	174,318	208,423
Net appreciation/(depreciation)	2,322,530	6,824,288
Total	\$ 4,217,498	\$ 8,685,497
Disbursements:		
Benefit payments:		
Periodic Payments	\$ 3,191,027	\$ 3,422,656
Lump Sum Distributions	176,708	297,666
Expenses	30,745	26,752
Total	\$ 3,398,480	\$ 3,747,074
Net increase/(decrease):	\$ 819,018	\$ 4,938,423
Market value at end of year	\$ 43,869,306	\$ 48,807,729

**TABLE 3  
INVESTMENT RETURN**

<b>Annual Rate of Investment Return</b>			
<b>For One-Year Period</b>		<b>For Period Ending December 31, 2017</b>	
<b>Ending December 31</b>	<b>Annual Rate</b>	<b>Period</b>	<b>Average Annual Rate</b>
2017	16.4%	1 year	16.4%
2016	5.9	2 years	11.0
2015	-0.6	3 years	7.0
2014	6.0	4 years	6.8
2013	18.7	5 years	9.0
2012	11.6	6 years	9.5
2011	-3.1	7 years	7.6
2010	11.1	8 years	8.0
2009	20.5	9 years	9.3
2008	-26.5	10 years	5.1
2007	12.2	11 years	5.7
2006	13.6	12 years	6.3
2005	8.5	13 years	6.5
2004	9.5	14 years	6.7
2003	18.8	15 years	7.5
2002	-9.3	16 years	6.3
2001	-4.0	17 years	5.7
2000	-3.5	18 years	5.2
1999	21.1	19 years	6.0
1998	8.8	20 years	6.1
1997	10.5	21 years	6.3
1996	10.1	22 years	6.5
1995	13.8	23 years	6.8
1994	-0.2	24 years	6.5

\* Rates of return for 1999 and earlier as reported by the prior actuary and used without audit.

\*\* Rates of return for 2013 and earlier are net of all expenses. Rate of return for 2014 and later are net of investment expenses only.

**TABLE 4**  
**ACTUARIAL BALANCE SHEET**  
**AS OF JANUARY 1, 2018**

The following table contains information on the actuarial balance sheet: the Plan's resources and requirements. The Plan requirements consist of the actuarial present value of projected plan benefits as of the valuation date. Plan resources consist of plan assets, projected future normal costs and the Plan's unfunded actuarial liability.

**REQUIREMENTS**

Present Value of Projected Benefits		
Retired Participants		\$ 35,043,479
Vested Inactive Participants		7,781,483
Active Participants		
Retirement	\$ 17,119,999	
Vested Withdrawal	204,658	
Death	134,518	
Disability	<u>1,067,046</u>	
Total Active		<u>18,526,221</u>
Total Present Value of Projected Benefits		\$ 61,351,183

**RESOURCES**

Market Value of Assets		\$ 48,807,729
Present Value of Future Normal Costs		1,325,886
Unfunded Actuarial Liability		<u>11,217,568</u>
Total		\$ 61,351,183

**TABLE 5**  
**UNFUNDED ACTUARIAL LIABILITY**

<b>Actuarial Liability as of January 1, 2018</b>		
Retired Participants and Beneficiaries		\$ 35,043,479
Vested Inactive Participants		7,781,483
Active Participants		<u>17,200,335</u>
Total		\$ 60,025,297
<b>Market Value of Assets</b>		\$ 48,807,729
<b>Unfunded Actuarial Liability as of January 1, 2018</b>		\$ 11,217,568
<b>Expected Unfunded Actuarial Liability on January 1, 2018</b>		
Unfunded Actuarial Liability as of January 1, 2017		\$ 14,508,461
Normal Cost		313,286
Employer Contributions		(1,652,786)
Administrative Expenses		26,752
Interest		<u>911,399</u>
Expected, January 1, 2018		\$ 14,107,112
<b>Changes</b>		
Experience (Gain)/Loss		
Asset (Gain)/Loss	(4,248,199)	
Salary (Gain)/Loss	(249,594)	
Pensioner Mortality (Gain)/Loss	158,360	
Retirement and Withdrawal (Gain)/Loss	64,593	
Other Demographic	<u>48,010</u>	
Total Experience (Gain)/Loss		(4,226,830)
Assumption Changes		1,337,286
Plan Changes		<u>0</u>
<b>Unfunded Actuarial Liability on January 1, 2018</b>		\$ 11,217,568

**TABLE 6  
FUNDING ANALYSIS**

The current annual budgeted contribution is 10.5% of payroll, plus an additional supplemental contribution of \$1,120,000 per year while the Plan is underfunded. Annual costs of the Plan include the value of benefit accrual allocated to the current year (normal cost) plus a payment towards the Unfunded Actuarial Liability, and includes a provision for administrative expenses paid out of plan assets. The following table shows the development of the anticipated number of years of supplemental contribution necessary to pay off the UAL based on the current annual valuation, if all future experience follows assumptions, there are no changes to assumptions, plan provisions or funding policy, and the policy contributions (including the supplemental contribution) are made each year.

**Annual Cost**

1. Entry Age Normal Cost	\$ 291,421
2. Anticipated Administrative Expenses	<u>26,734</u>
3. Total Annual Cost: 1. + 2.	318,155
4. Total Payroll	\$ 4,738,991
5. Annual Cost as a Percentage of Payroll: 3. ÷ 4.	6.71%

**Percent of Payroll Contribution**

6. Percent of Payroll Contribution Rate	10.50%
7. Present Value of Future Salary	\$ 22,261,931
8. Present Value of Future Payroll Contributions: 6. x 7.	\$ 2,337,503
9. Present Value of Future Normal Costs	<u>1,325,886</u>
10. Present Value of Payroll Contributions in excess of Normal Cost, available to fund UAL: 8. - 9.	\$ 1,011,617

**Unfunded Actuarial Liability (UAL)**

11. UAL at January 1, 2018	\$ 11,217,568
12. Present Value of Payroll Contributions in excess of Normal Cost, available to fund UAL: Line 10. above	<u>1,011,617</u>
13. Net UAL to be funded by Supplemental Contributions: 11. - 12.	\$ 10,205,951

**Supplemental Contribution**

14. Budgeted Annual Supplemental Contribution	\$ 1,120,000
15. Anticipated Annual Administrative Expenses	<u>26,734</u>
16. Net Annual Supplemental Contribution to fund UAL: 14. - 15.	\$ 1,093,266

**Number of Years of Supplemental Contribution (as a Flat Dollar Amount) Necessary to Fund UAL** 14

**TABLE 7  
HISTORICAL STATISTICS**

	2018	2017	2016	2015	2014
<b>Assets</b>					
Market Value of Assets	\$ 48,807,729	\$ 43,869,306	\$ 43,050,288	\$ 45,722,416	\$ 44,692,556
Market Value Return	16.4%	5.9%	-0.6%	6.0%	18.7%
<b>Present Value of Projected Benefits</b>					
For retirees and beneficiaries	\$ 35,043,479	\$ 32,987,654	\$ 29,416,757	\$ 25,057,100	\$ 21,608,789
For terminated vested participants	7,781,483	7,376,146	8,310,826	8,522,860	8,473,138
For active participants	<u>18,526,221</u>	<u>19,430,245</u>	<u>22,132,668</u>	<u>26,532,164</u>	<u>28,678,500</u>
Total	\$ 61,351,183	\$ 59,794,045	\$ 59,860,251	\$ 60,112,124	\$ 58,760,427
<b>Actuarial Liability</b>	\$ 60,025,297	\$ 58,377,767	\$ 57,914,989	\$ 57,796,305	\$ 56,182,808
<b>Participant Statistics</b>					
<b>Retired Participants</b>					
Number	242	238	222	205	190
Average Monthly Benefits	\$ 1,213	\$ 1,169	\$ 1,124	\$ 1,060	\$ 1,009
<b>Vested Inactive Participants</b>					
Number	89	94	103	113	121
Average Monthly Benefits	\$ 859	\$ 834	\$ 857	\$ 838	\$ 810
<b>Active Participants</b>					
Number of Participants	70	78	95	113	128
Average Compensation	\$ 67,700	\$ 67,375	\$ 65,172	\$ 64,661	\$ 64,085
Average Years of Service	27.2	26.5	25.9	25.7	25.3
Average Age	59.7	59.3	59.3	59.0	58.6
<b>Actuarial Assumptions</b>					
Interest	6.25%	6.50%	6.50%	6.50%	6.50%
Salary Growth	Table	Table	Table	Table	Table
Mortality Table Utilized	RP-2000; Proj Gen (AA)	RP-2000; Proj Gen (AA)	RP-2000; Proj Gen (AA)	RP-2000; Proj Gen (AA)	RP-2000; Proj 2021 (AA)



**TABLE 8**  
**TWENTY-YEAR PROJECTION OF BENEFIT PAYMENTS**

The following table provides a projection of benefit payments over the next twenty years. This can be useful for the investment manager in planning future liquidity requirements.

Plan Year	Estimated Annual Benefit Payments
2018	4,279,000
2019	4,551,000
2020	4,576,000
2021	4,857,000
2022	4,884,000
2023	5,088,000
2024	4,998,000
2025	5,064,000
2026	4,988,000
2027	5,049,000
2028	4,936,000
2029	4,878,000
2030	4,708,000
2031	4,630,000
2032	4,542,000
2033	4,370,000
2034	4,170,000
2035	3,981,000
2036	3,839,000
2037	3,683,000

## APPENDIX A ACTUARIAL PROCEDURES AND ASSUMPTIONS

The actuarial assumptions used in the valuation are intended to estimate future experience affecting projected benefit flow and investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in the estimated costs of the plan's benefits.

The tables in this section give rates of decrement, referred to in actuarial notation by the general symbol "q'." The underlying theory is described more fully in Jordan, *Life Contingencies*, Society of Actuaries (Second Edition, 1967), page 277. Any age referred to in a table is always the age of the person at his or her nearest birthday.

An annual assumption review was performed based on data through 2017, as documented in our annual assumption review document dated February 7, 2018. The assumptions used in this valuation are based on the recommendations from that report, as approved by the Retirement Committee at their February 8, 2018 meeting.

### Actuarial Cost Method

The actuarial cost method we use to calculate the funding requirements of the Plan is called the *entry age normal cost method*.

Under this cost method, the actuarial present value of the projected benefits of each individual included in the valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit age. The portion of the actuarial present value of the projected benefits allocated to all service prior to the valuation date is called the Actuarial Liability. The portion of this actuarial present value of projected benefits allocated to a valuation year is called the Normal Cost.

### Asset Valuation Method

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

### Investment Earnings

6.25% per annum, compounded annually net of investment-related expenses.

The investment return assumption was selected based on the Plan's asset allocation and capital market assumptions from several sources, including published studies summarizing the expectations of various investment experts. This information was then used to develop forward looking long-term expected returns, producing a range of reasonable expectations according to industry experts. Based on the resulting range of potential assumptions, in our professional judgement the selected investment return assumption is reasonable and is not expected to have any significant bias.

### COLA

None.

**Wage Increase**

3.50%

**Earnings Progression**

Annual salary increases are based on a table graded by age, as displayed below:

Age	Percentage Increase at Age			
	Inflation	Productivity	Merit	Total
40	2.5%	1.0%	1.0%	4.5%
45	2.5	1.0	0.8	4.3
50	2.5	1.0	0.7	4.2
55	2.5	1.0	0.5	4.0
60	2.5	1.0	0.2	3.7
65+	2.5	1.0	0.1	3.6

**Retirement**

The following table sets forth the probability of retirement according to age.

Age	Probability of Retirement
55-60	5%
61-64	10
65	65
66-68	40
69 & Over	100

Deferred Vested participants were assumed to retire at age 65.

**Disablement**

Graduated rates are used. See table below for sample rates.

**Withdrawal Rates**

Graduated rates are used. Sample rates are as follows:

Age at Termination	Withdrawal		Disability
	Male	Female	
35	8.58%	9.53%	0.19%
45	3.88	5.23	0.44
55	2.00	3.29	1.19
60	1.50	2.15	1.80

### Mortality

Healthy Lives, Pre-retirement – RP-2000 Healthy Non-Annuitant Mortality Table projected generationally using Scale AA

Healthy Lives, Post-retirement – RP-2000 Healthy Annuitant Mortality Table projected generationally using Scale AA

Disabled Lives – RP-2000 Healthy Non-Annuitant and Annuitant Mortality Table set forward 3 years and projected generationally using Scale AA

This assumption includes a margin for future mortality improvement relative to recent plan experience.

### Expenses

The average of the prior three year's expenses:

Year	Expenses
2017	\$ 26,752
2016	30,745
2015	22,706
Average	\$ 26,734

### Marriage Rates

85% of all active and terminated participants not currently receiving benefits are assumed to be married. Male spouses are assumed to be three years older than their female spouses.

### Future Credited Service

The Future Credited Service rate is equal to the member's Full Time Equivalent (FTE) rate as of December 31 preceding the current valuation year.

### Form of Payment

15% of participants retiring from active service are assumed to elect a lump sum.

### Changes in Actuarial Assumptions and Methods as of January 1, 2018

The investment return rate assumption was lowered to 6.25% to better reflect anticipated experience.

## APPENDIX B PLAN SUMMARY

All actuarial calculations are based upon our understanding of the provisions of City of Fort Collins General Employees' Retirement Plan, as adopted and in effect on January 1, 2018. This summary does not attempt to cover all of the detailed provisions.

### Plan Year

The Plan Year is the 12-month period beginning January 1 and ending December 31.

### Effective Date

The original effective date of the Plan is January 1, 1971. The Plan was most recently amended and restated effective January 1, 2016.

### Eligible Employee Classification

All persons employed to fill a classified position defined by the city, excluding police officers and firefighters, shall become a member of the Plan on the later of the Effective Date of the Plan or Date of Hire.

The Plan was frozen to new entrants as of January 1, 1999.

### Accrued Benefit

The Accrued Benefit for each Member is the Member's Normal Retirement Benefit calculated using Average Monthly Compensation and Credited Service as of the calculation date. In no event will a Member's Accrued Benefit be less than the Accrued Benefit earned as of June 30, 2003.

### Average Monthly Compensation

A Member's Average Monthly Compensation, as of a given date, is the average of the highest 60 consecutive months of considered compensation during the last 120 months of Credited Service. In the event that a participant was employed on a part time basis during any portion of this period, the compensation will be converted to a full time equivalent for purposes of calculating the Average Monthly Compensation.

### Compensation

Compensation is the gross compensation included as taxable income on Form W-2, excluding bonuses, compensatory time recorded as additional hours, overtime pay, workers' compensation accrued vacation pay, taxable fringe benefits, but including any amounts contributed by the City to a salary reduction agreement including Code Sections 125, 132(f)(4), 402(a)(8), 403(b), 402(a), and 457.

### Credited Service

A Year of Service is credited for each plan year a member works 2,080 hours. If the member works less than 2,080 hours, a partial Year of Service will be credited on a prorate basis based on the number of hours for which compensation is paid. Service is credited while a member is on long-term disability as long as no benefits are being paid from the Plan.

### Vested Accrued Benefit

A Participant's Vested Accrued Benefit as of a given date is equal to the product of his Accrued Benefit multiplied by his Vested Percentage as of that same date.

### Vesting Schedule

Members become vested in their Accrued Benefit according to the following schedule:

Years of Credited Service	Percent Vested
Less than 2	0%
2	40%
3	60%
4	80%
5 and over	100%

### Normal Retirement Date

A Participant's Normal Retirement Age is the first of the month coincident with or next following the attainment of age 65.

### Normal Retirement Benefits

Each Member who becomes eligible for a Normal Retirement Benefit under the Plan will be entitled to receive a monthly retirement pension benefit beginning at the Member's Normal Retirement Date and payable in the Normal Benefit Form equal to:

- 1.5% of Average Monthly Compensation, multiplied by Credited Service.

### Normal Benefit Form

Life Annuity - Monthly pension benefit payable for the lifetime of the Member.

### Early Retirement

(a) Early Retirement Date

A Member's Early Retirement Date is the first day of the month so elected by the Member which coincides with or next follows the date upon which the Member attains age 55 and completes 2 Years of Service.

(b) Early Retirement Benefit

A Member's Early Retirement Benefit is a monthly pension benefit equal to his Accrued Benefit determined as of his Early Retirement Date, reduced by 1/15<sup>th</sup> for the first 5 years and 1/30<sup>th</sup> for each of the next 5 years payments commence prior to age 65.

### Optional Benefit Forms

Optional Benefit Forms are available and equal to the Actuarial Equivalent of the Normal Benefit Form and may be in an amount more than or less than that provided by the Normal Benefit Form depending on the option selected. Such distribution may be as a Joint & 50% or 100% Survivor Annuity, a Life Annuity with 120 payments guaranteed, or a Lump Sum.

### **Pre-Retirement Death Benefit**

If a Member dies prior to commencing pension payments, the Member's beneficiary will receive a single sum benefit in an amount equal to 47% of the actuarial equivalent value of the Member's Accrued Benefit. If the beneficiary is the Member's spouse, the spouse may elect a monthly benefit which is the actuarial equivalent of the single sum benefit. (The 47% factor is stated in the Plan Document Article XI, Section 11. It was developed assuming that the participant quit the day prior to death and elected a 50% joint and survivor benefit.)

### **Termination Benefit**

In the event of the termination of a Member's employment for any reason other than death, disability or retirement after completing 2 Years of Service, the Member will become entitled to receive a monthly pension benefit commencing on his Normal Retirement Date equal to his Vested Accrued Benefit.

If the deferred benefit to which the Member is to be paid at his Normal Retirement Date has an actuarial equivalent value less than \$5,000, the entire benefit will be paid to the terminated participant as a single lump sum.

### **Disability Benefit**

#### **(a) Total Disability**

The monthly benefit, payable for life commencing at normal retirement date, is equal to the normal retirement benefit considering annual rate of compensation at disability and credited service he would have accumulated if employment had continued uninterrupted to his normal retirement date.

#### **(b) Permanent Partial Disability**

A member may accrue Credited Service under the Plan for any period of time up to a maximum accrual of two (2) years.

Instead of the disability benefit described above, the disabled participant may elect to take a lump-sum distribution at any time.

### **City Contributions**

The entire cost of the Plan is to be paid by the City.

### **Plan Changes**

None

## APPENDIX C PARTICIPANT DATA

The actuarial valuation of the Plan is based on the participant data provided to us by the City. The data includes active participants, terminated vested participants who retain benefits under the Plan, and retirees and beneficiaries receiving benefits as of January 1, 2018. A total of 401 participants were reported to us and included in this valuation. Table 1 includes a reconciliation of the participant data from January 1, 2017 to January 1, 2018.

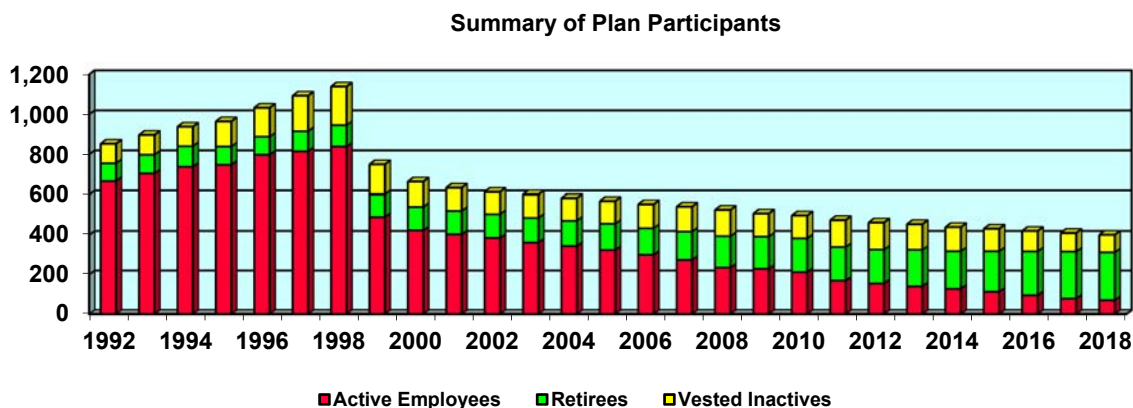
The age and service characteristics of the 70 active participants in the Plan as of January 1, 2018 are shown in Table 2. As indicated in Table 2, the average age of the active participants on the valuation date was 59.7, up from the average age of 59.3 of the active participants on January 1, 2017. The average years of service of the active participants on January 1, 2018 was 27.2, up from the 26.5 average years of service of the active participants on January 1, 2017.

In addition to the active members, there were 89 inactive participants not yet in pay status retaining benefits under the Plan. Table 3 contains a summary of the number of inactive participants not yet in pay status but retaining benefits under the Plan, and the amounts of those benefits.

Tables 4 and 5 summarize the information provided on the 242 members and beneficiaries who are currently receiving monthly benefits. Table 4 contains a summary of the number of participants receiving benefits and the amounts of those benefits, while Table 5 lists the benefits being paid as of January 1 of each year from 1987 to 2017. Counts and total annual benefit amounts are separated by status and sex.

Table 6 displays the list of the retirement dates and status of participants eligible for normal or delayed retirement in the next five years.

Because participation in the Plan was frozen as of January 1, 1999, the number of participants in the Plan has declined over the years, as illustrated below:





**TABLE C-1**  
**RECONCILIATION OF PARTICIPANT DATA**  
**(JANUARY 1, 2017 TO JANUARY 1, 2018)**

	Actives	Terminated Vested	Retired	Beneficiary	Total
<b>Included in January 1, 2017 Valuation:</b>	78	94	213	25	410
<b>Change due to:</b>					
<b>New entrants</b>	N/A	N/A	N/A	N/A	N/A
<b>Rehired</b>	0	0	0	N/A	0
<b>Termination</b>					
<b>Nonvested</b>	0	N/A	N/A	N/A	0
<b>Vested</b>	0	0	N/A	N/A	0
<b>Retirement</b>	(8)	(1)	9	0	0
<b>Disabled</b>	0	0	0	0	0
<b>Death no Beneficiary</b>	0	0	(4)	(1)	(5)
<b>Death with Beneficiary</b>	0	0	(2)	2	0
<b>Cash out</b>	0	(4)	0	0	(4)
<b>Other</b>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Net change</b>	(8)	(5)	3	1	(9)
<b>Included in January 1, 2018 Valuation:</b>	70	89	216	26	401

**TABLE C-2**  
**SUMMARY OF ACTIVE PARTICIPANTS AS OF JANUARY 1, 2018**

Age	Years of Service							Total
	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 & Up	
<b>Number of Participants</b>								
Under 25	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	1	0	0	1
45 to 49	0	0	0	2	3	0	0	5
50 to 54	0	0	2	2	2	3	0	9
55 to 59	0	0	0	0	2	9	3	14
60 to 64	0	0	0	0	8	12	12	32
65 & Up	0	0	0	1	3	2	3	9
<b>Total</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>5</b>	<b>19</b>	<b>26</b>	<b>18</b>	<b>70</b>
<b>Salary</b>								
Under 25	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	69,425	0	0	69,425
45 to 49	0	0	0	134,111	175,897	0	0	310,008
50 to 54	0	0	101,116	112,529	125,079	201,017	0	539,741
55 to 59	0	0	0	0	117,294	610,627	182,481	910,402
60 to 64	0	0	0	0	563,002	850,601	870,507	2,284,110
65 & Up	0	0	0	43,471	211,400	101,669	268,765	625,305
<b>Total</b>	<b>0</b>	<b>0</b>	<b>101,116</b>	<b>290,111</b>	<b>1,262,097</b>	<b>1,763,914</b>	<b>1,321,753</b>	<b>4,738,991</b>

**TABLE C-2 (CONTINUED)**  
**SUMMARY OF ACTIVE PARTICIPANTS AS OF JANUARY 1, 2018**

Age	Years of Service							Total
	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 & Up	
	<b>Average Compensation</b>							
Under 25	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	69,425	0	0	69,425
45 to 49	0	0	0	67,056	58,632	0	0	62,002
50 to 54	0	0	50,558	56,265	62,539	67,006	0	59,971
55 to 59	0	0	0	0	58,647	67,847	60,827	65,029
60 to 64	0	0	0	0	70,375	70,883	72,542	71,378
65 & Up	0	0	0	43,471	70,467	50,835	89,589	69,478
Total	0	0	50,558	58,022	66,426	67,843	73,431	67,700

**HISTORICAL SUMMARY**

	2012	2013	2014	2015	2016	2017	2018
Not Vested:	0	0	0	0	0	0	0
Partially Vested:	0	0	0	0	0	0	0
Fully Vested:	<u>155</u>	<u>140</u>	<u>128</u>	<u>113</u>	<u>95</u>	<u>78</u>	<u>70</u>
Total:	155	140	128	113	95	78	70
Total Compensation:	\$9,582,235	\$8,834,557	\$8,202,862	\$7,306,661	\$6,191,383	\$5,255,224	\$4,738,991
Average Rate of Pay:	\$61,821	\$63,104	\$64,085	\$64,661	\$65,172	\$67,375	\$67,700
Average Service:	24.2	24.7	25.3	25.7	25.9	26.5	27.2
Average Age:	57.5	57.9	58.6	59.0	59.3	59.3	59.7

**TABLE C-3**  
**SUMMARY OF DEFERRED VESTED AND DEFERRED DISABLED PARTICIPANTS**  
**AS OF JANUARY 1, 2018**

Age	Number	Total Annual Benefit	Average Monthly Benefit
30-34	0	\$ 0	\$ 0
35-39	0	0	0
40-44	1	8,328	694
45-49	2	19,884	829
50-54	6	62,424	867
55-59	31	257,148	691
60-64	44	488,436	925
65 & Up	<u>5</u>	<u>81,336</u>	1,356
Total	89	\$ 917,556	\$ 859

**HISTORICAL SUMMARY**

	2012	2013	2014	2015	2016	2017	2018
<b>Deferred Vested</b>							
Number:	135	128	120	112	102	93	88
Total Annual Benefit:	\$1,402,476	\$1,320,218	\$1,162,402	\$1,123,187	\$1,046,364	\$927,624	\$904,296
Average Monthly Benefit:	\$866	\$860	\$807	\$836	\$855	\$831	\$856
Average Age:	57.0	57.6	58.0	58.4	59.0	59.3	59.9
<b>Deferred Disabled</b>							
Number:	1	1	1	1	1	1	1
Total Annual Benefit:	\$13,260	\$13,260	\$13,260	\$13,260	\$13,260	\$13,260	\$13,260
Average Monthly Benefit:	\$1,105	\$1,105	\$1,105	\$1,105	\$1,105	\$1,105	\$1,105
Average Age:	55.0	56.0	57.0	58.0	59.0	60.0	61.0

**TABLE C-4**  
**SUMMARY OF HEALTHY RETIREES, DISABLED RETIREES, AND BENEFICIARIES AS OF JANUARY 1, 2018**

Age	Healthy Retirees			Disabled Retirees			Beneficiaries			Total		
	Number	Annual Benefit	Average Monthly Benefit	Number	Annual Benefit	Average Monthly Benefit	Number	Annual Benefit	Average Monthly Benefit	Number	Annual Benefit	Average Monthly Benefit
55-59	2	\$28,310	\$1,180	0	\$0	\$0	0	\$0	\$0	2	\$28,310	\$1,180
60-64	11	167,016	1,265	0	0	0	2	10,276	428	13	177,292	1,136
65-69	74	1,451,415	1,634	1	29,956	2,496	3	75,488	2,097	78	1,556,859	1,663
70-74	54	814,866	1,258	1	24,054	2,005	2	12,068	503	57	850,988	1,244
75-79	32	378,071	985	2	21,960	915	4	20,168	420	38	420,199	921
80-84	25	261,447	871	1	11,258	938	2	4,004	167	28	276,709	824
Above 85	13	105,583	677	0	0	0	13	107,813	691	26	213,396	684
Total	211	\$3,206,708	\$1,266	5	\$87,228	\$1,454	26	\$229,817	\$737	242	\$3,523,753	\$1,213

**HISTORICAL SUMMARY**

	2012	2013	2014	2015	2016	2017	2018
<b>Healthy Retirees</b>							
Number:	143	157	163	179	193	208	211
Total Annual Benefit:	\$1,553,258	\$1,836,582	\$2,057,107	\$2,363,969	\$2,734,731	\$3,074,702	\$3,206,708
Average Monthly Benefit:	\$905	\$975	\$1,052	\$1,101	\$1,181	\$1,232	\$1,266
Average Age:	72.5	72.6	72.8	72.7	72.6	72.6	73.1
<b>Disabled Retirees</b>							
Number:	6	5	6	5	5	5	5
Total Annual Benefit:	\$76,483	\$61,091	\$91,047	\$87,228	\$87,228	\$87,228	\$87,228
Average Monthly Benefit:	\$1,062	\$1,018	\$1,265	\$1,454	\$1,454	\$1,454	\$1,454
Average Age:	73.5	72.4	72.2	73.8	74.8	75.8	76.8
<b>Beneficiaries</b>							
Number:	22	23	21	21	24	25	26
Total Annual Benefit:	\$140,353	\$160,626	\$151,954	\$157,192	\$172,028	\$177,130	\$229,817
Average Monthly Benefit:	\$532	\$582	\$603	\$624	\$597	\$590	\$737
Average Age:	81.6	82.4	82.1	82.6	82.7	81.7	81.9

**TABLE C-5**  
**NUMBER OF PENSIONERS AND AMOUNT OF ANNUAL ANNUITY AS OF THE END OF EACH YEAR**

Year	Retirement*				Beneficiaries*				Disability**				All	
	Male		Female		Male		Female		Male		Female			
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount
1987	72	267,262			6	12,904							78	280,166
1988	70	264,467			6	9,299							76	273,766
1989	75	355,402			5	15,931							80	371,333
1990	65	370,147	19	38,437	2	3,561	3	12,370	2	2,041	0	0	91	426,556
1991	64	370,359	17	42,832	3	4,736	3	14,349	2	2,041	0	0	89	434,317
1992	65	375,014	18	51,214	3	4,736	4	15,640	2	2,041	1	5,692	93	454,337
1993	67	393,340	22	79,136	3	4,736	7	35,056	3	18,485	1	5,692	103	536,445
1994	60	394,223	17	75,333	1	3,099	8	39,381	3	21,369	2	10,884	91	544,287
1995	55	359,659	17	77,358	1	3,099	11	55,120	4	25,825	2	10,884	90	531,945
1996	66	466,177	18	84,593	1	3,099	10	50,512	4	25,825	2	10,884	101	641,090
1997	68	477,993	21	104,091	1	3,099	10	50,512	5	35,717	2	10,884	107	682,296
1998	70	547,160	23	121,654	1	3,099	11	53,600	6	40,722	2	10,884	113	777,119
1999	74	593,649	23	133,013	1	3,099	12	61,432	5	32,577	2	10,884	117	834,654
2000	74	650,175	22	136,795	1	3,572	13	71,763	5	34,506	2	11,825	117	908,636
2001	74	656,815	23	143,199	1	3,572	13	71,763	6	45,764	2	11,825	119	932,938
2002	73	691,385	29	194,447	1	3,572	12	68,051	6	45,764	2	11,825	123	1,015,044
2003	75	750,807	31	214,130	2	9,855	12	70,742	6	45,764	1	5,543	127	1,096,841
2004	77	807,941	33	215,275	2	9,855	13	80,089	6	45,764	1	5,543	132	1,164,467
2005	78	809,581	33	215,275	2	9,855	14	87,665	6	45,764	1	5,543	134	1,173,683
2006	83	889,557	36	241,760	2	9,855	14	87,665	7	63,995	1	5,543	143	1,298,375
2007	90	1,080,910	43	310,359	2	9,855	16	97,728	7	63,994	1	5,543	159	1,568,389
2008	90	1,050,492	47	338,564	2	9,855	17	114,736	7	63,995	0	0	163	1,577,642
2009	92	1,160,329	49	384,191	2	9,855	20	128,436	8	88,050	0	0	171	1,770,861
2010	90	1,151,934	51	399,867	3	18,484	20	129,032	6	76,483	0	0	170	1,775,800
2011	90	1,141,103	53	412,155	3	18,484	19	121,869	6	76,483	0	0	171	1,770,094
2012	101	1,382,769	56	453,813	3	18,484	20	142,142	5	61,091	0	0	185	2,058,299
2013	103	1,512,466	60	544,641	2	12,201	19	139,753	6	91,047	0	0	190	2,300,108
2014	115	1,764,025	64	599,944	1	3,572	20	153,620	5	87,228	0	0	205	2,608,389
2015	122	2,024,794	71	709,937	1	3,572	23	168,456	5	87,228	0	0	222	2,993,987
2016	128	2,178,732	80	895,970	1	3,572	24	173,558	5	87,228	0	0	238	3,339,060
2017	131	2,277,008	80	929,700	1	3,572	25	226,245	5	87,228	0	0	242	3,523,753

\* Male and female splits are not available prior to 1990.

\*\* Retirement and disability splits are not available prior to 1990.

**TABLE C-6**  
**SCHEDULE OF MEMBERS ELIGIBLE FOR NORMAL OR**  
**DELAYED RETIREMENT IN THE NEXT FIVE YEARS**

Normal Retirement Date	Current Status
12/1/2009	Active
1/1/2012	Active
1/1/2013	Active
1/1/2013	Active
3/1/2014	Active
3/1/2016	Active
4/1/2016	Deferred Vested
10/1/2016	Active
12/1/2016	Active
4/1/2017	Active
7/1/2017	Deferred Vested
12/1/2017	Deferred Vested
12/1/2017	Deferred Vested
1/1/2018	Deferred Vested
2/1/2018	Deferred Vested
2/1/2018	Active
4/1/2018	Deferred Vested
5/1/2018	Active
6/1/2018	Deferred Vested
7/1/2018	Deferred Vested
8/1/2018	Active
8/1/2018	Deferred Vested
9/1/2018	Deferred Vested
9/1/2018	Active
9/1/2018	Active
10/1/2018	Deferred Vested
10/1/2018	Active
11/1/2018	Active
1/1/2019	Active
2/1/2019	Deferred Vested
3/1/2019	Deferred Vested
3/1/2019	Active
3/1/2019	Deferred Vested
4/1/2019	Deferred Vested
4/1/2019	Active
4/1/2019	Deferred Vested
5/1/2019	Deferred Vested
5/1/2019	Active
5/1/2019	Active
6/1/2019	Deferred Vested
7/1/2019	Active
10/1/2019	Deferred Vested
11/1/2019	Deferred Vested

<b>Normal Retirement Date</b>	<b>Current Status</b>
11/1/2019	Deferred Vested
2/1/2020	Deferred Vested
3/1/2020	Active
4/1/2020	Deferred Vested
5/1/2020	Active
5/1/2020	Deferred Vested
6/1/2020	Active
7/1/2020	Deferred Vested
8/1/2020	Deferred Vested
10/1/2020	Deferred Vested
10/1/2020	Deferred Vested
11/1/2020	Active
11/1/2020	Active
12/1/2020	Deferred Vested
12/1/2020	Deferred Vested
2/1/2021	Active
3/1/2021	Deferred Vested
3/1/2021	Deferred Vested
5/1/2021	Active
6/1/2021	Deferred Vested
6/1/2021	Active
6/1/2021	Active
7/1/2021	Active
7/1/2021	Deferred Vested
8/1/2021	Deferred Vested
10/1/2021	Deferred Vested
12/1/2021	Deferred Vested
12/1/2021	Active
1/1/2022	Deferred Vested
1/1/2022	Active
2/1/2022	Deferred Vested
2/1/2022	Active
2/1/2022	Deferred Vested
2/1/2022	Deferred Vested
3/1/2022	Deferred Vested
5/1/2022	Deferred Vested
6/1/2022	Active
8/1/2022	Deferred Vested
9/1/2022	Active
10/1/2022	Active
11/1/2022	Deferred Vested
12/1/2022	Deferred Vested
12/1/2022	Active