



**JOINT WORK SESSION MEETING
AGENDA
CITY OF CREVE COEUR
CITY COUNCIL AND EMPLOYEE PENSION FUND BOARD
300 NORTH NEW BALLAS RD
OCTOBER 25, 2021
6:00 PM**

CALL TO ORDER

ROLL CALL

DISCUSSION ITEMS

- 1. Approval of September 27, 2021 City Council Work Session Meeting Minutes**
- 2. Review of Actuarial Report with Employee Pension Board**
Summary: To present and discuss the Actuarial Report prepared by Mike Zwiener with Milliman.

Pursuant to Section 610.022 RSMo., the City Council could, at any time during the meeting, vote to close the public meeting and move to closed session to discuss matters relating to litigation, legal actions and/or communications from the City Attorney as provided under Section 610.021(1) RSMo. and/or personnel matters under Section 610.021(13) RSMo. And/or employee matters under Section 610.021(3) RSMo. and/or real estate matters under Section 610.021(2) or other matters as permitted by Chapter 610.

Posted: _____ posted 10/21/2021
Melissa Orscheln
Public Information Officer



**WORK SESSION MEETING
MINUTES
CITY OF CREVE COEUR
CITY COUNCIL
300 NORTH NEW BALLAS RD
SEPTEMBER 27, 2021
6:00 PM**

BIENNIAL ETHICS TRAINING FOR ELECTED AND APPOINTED OFFICIALS

A work session of the City Council of the City of Creve Coeur was called to order by Mayor Hoffman at the City Council Chamber, 300 North New Ballas Roads, City of Creve Coeur Government Center, Creve Coeur, MO 63141, on Monday, September 27, 2021 at 6:05 p.m. in the Multi-Purpose Room. The meeting was also held live via Zoom.

In attendance:

Mayor Robert Hoffman
Council Member Heather Silverman - Ward 1
Council Member Mark Manlin - Ward 1
Council Member Nicole Greer - Ward 2
Council Member Tim Carney - Ward 2
Council Member David Hoffman - Ward 3
Council Member Alice Benner - Ward 3
Council Member Dan Tierney - Ward 4
Council Member Joseph Martinich - Ward 4

Also in attendance were thirty-one (31) appointed members of various boards, committees, commission and task forces attending in person, with an additional twenty-two (22) attending virtually.

Staff in attendance: City Administrator Mark Perkins, City Attorney Carl Lumley, Director of Community Development Jason Jaggi, Director of Public Works Jim Heines, Chief of Police Jeff Hartman, Assistant Director of Public Works/City Engineer Matt Wohlberg, Assistant City Administrator/Acting City Clerk Sharon Stott, and Human Resources Generalist Janet Rueschhoff.

City Attorney Carl Lumley presented on the City's Biennial Ethics Training for Elected and Appointed Officials.

The meeting adjourned at 6:31 p.m.

Submitted by:

Sharon Stott
Acting City Clerk

Robert Hoffman
Mayor



RETIREMENT PLAN FOR EMPLOYEES OF THE CITY OF CREVE COEUR

Actuarial Valuation Report July 1, 2021

Prepared by

Michael J. Zwiener, FSA
Consulting Actuary

William Winningham, EA, MAAA
Consulting Actuary

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Introduction and Purpose

In this report, we present the results of the July 1, 2021 actuarial valuation for the Retirement Plan for Employees of the City of Creve Coeur.

Purposes of the Valuation

The actuarial valuation of the Plan is intended to accomplish several purposes:

- (a) In general, the determination of current levels of employer contributions which, together with prior funding, will accumulate monies sufficient to meet benefit payments when due under the terms of the Plan;
- (b) review plan experience for the year ended on the valuation date to ascertain whether the assumptions and methods employed for valuation purposes are reflective of actual events and remain appropriate for prospective application; and
- (c) assessment of the relative funded position of the plan on an ongoing basis, i.e., through a comparison of plan assets and projected plan liabilities.

Actuarial Certification

As requested, we have performed an actuarial valuation of the Retirement Plan for Employees of the City of Creve Coeur as of July 1, 2021 for the Plan Year ending June 30, 2022. Our findings are set forth in this actuary's report. This report reflects the benefit provisions in effect on July 1, 2021.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the the Plan's Administrative Staff. This information includes, but is not limited to, statutory plan provisions, employee 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.

The valuation results were developed using models intended for valuations that use standard actuarial techniques. In addition, Milliman has developed certain models to develop the expected long term rate of return on assets used in this analysis. We have reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice. The models, including all input, calculations, and output may not be appropriate for any other purpose.

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 City has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in this report.

Actuarial Certification

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the Fund. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Fund's funding requirements and goals. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report.

Milliman's work is prepared solely for the internal business use of the City of Creve Coeur and its employees (for their use in administering the 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 exceptions:

- (a) The System may provide a copy of Milliman's work, in its entirety, to the System's professional 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 System 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 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 actuaries are independent of the City. 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 has been prepared in accordance with generally recognized 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.



Michael J. Zwiener, FSA
Consulting Actuary



William Winningham, EA, MAAA
Consulting Actuary

Discussion of Valuation Results

Actuarially Determined Contribution

The results of this valuation are used to actuarially determine contribution amounts to the Fund for the July 1, 2021 - June 30, 2022 fiscal year. A comparison of actuarially determined contribution amounts for the current and immediately preceding valuation are summarized below:

	Actuarial Valuation as of	
	July 1, 2020	July 1, 2021
Actuarially Determined Employer Contribution*	\$1,230,482	\$977,511
Actuarially Determined Employer Contribution**	\$1,313,540	\$1,036,162
Actual Employer Contribution	\$1,271,253	N/A

* Assuming payment as of first day of plan year

**Assuming payment as of last day of plan year

Plan Assets

The market value of plan assets increased from \$26,373,489 at July 1, 2020 to \$33,098,397 at June 30, 2021. A balance sheet and statement of income and disbursements are presented on pages 7 and 8. Investment income (net of expense) was \$7,359,276 for a return of 28.2%. During the prior year, investment return was 2.3%. Contributions to the fund were \$1,361,091 and benefit payments totaled \$1,929,682.

Valuation assets are defined to be actuarial value using an asset smoothing method. On an actuarial value basis, fund assets are \$29,800,918 on July 1, 2021, compared to \$27,258,531 on July 1, 2020. Net investment income was \$3,176,755 for return of 11.8%. The development of the actuarial value of assets is shown on page 9.

Actuarial Assumptions, Methods and Plan Provisions

The amortization period for the pre-2015 unfunded actuarial liability was extended an additional 4 years. The interest rate was changed from 6.75% to 6.00%. The mortality table was changed from RP-2000 Combined Healthy Table with a 70% Blue Collar adjustment using projection scale BB to Pub-2010 General Amount-Weighted Mortality table using improvement scale updates published annually (currently MP-2020). The employee contribution rate was increased from 3.00% to 4.00% effective July 1, 2019.

All other actuarial assumptions and methods remained the same as the prior valuation. Descriptions of all actuarial assumptions, methods, and Plan provisions can be found on pages 13-16.

Plan Population

The number of active participants decreased from 35 on July 1, 2020 to 31 on July 1, 2021. The number of retirees/beneficiaries/disableds increased from 82 to 86, and the number of deferred vested participants decreased from 20 to 18.

Discussion of Valuation Results

Plan Experience

Prior to assumption changes, plan experience resulted in an overall experience gain for the plan year ending June 30, 2021. This is primarily due to a gain on Actuarial Value of Assets.

GASB 67/68

Results under GASB 67 and 68 are presented in a separate report.

Funded Status - Accrued Benefit Basis

Another measure of a plan's funded status is the relationship of the market value of plan assets to the present value of benefits accrued to date. The amounts for the current and prior year are shown in the following table:

	Valuation Date July 1, 2020	Valuation Date July 1, 2021
a) Present Value of Vested Accrued Benefits	\$30,278,709	\$33,417,805
b) Present Value of All Accrued Benefits	\$30,657,028	\$33,744,681
c) Market Value of Assets	\$26,373,489	\$33,098,397
d) Ratio: (c)/(a)	87.1%	99.0%
e) Ratio: (c)/(b)	86.0%	98.1%

The interest discount utilized for this purpose was 6.75% in 2020 and 6.00% in 2021. The discount rate that is required to value plan liabilities on a settlement basis is typically lower than the "ongoing basis" discount rate. Therefore, these amounts should not be used to assess the plan's funded status on a settlement basis.

Funded Status - Actuarial Accrued Liability Basis

The most common measure of a public sector plan's funded status is dividing the Plan Assets by the Actuarial Accrued Liability. As of the valuation date, this ratio is 84.7% using Actuarial Value of Assets and 94.1% using the Market Value of Assets.

Summary of Valuation Results

	Valuation Date July 1, 2020	Valuation Date July 1, 2021
Participant Data		
Number of Participants		
Active participants	35	31
Terminated vested participants	20	18
Retirees and beneficiaries	82	86
Total	137	135
Covered Payroll	2,532,924	2,510,196
Assets		
Market Value of Assets	26,373,489	33,098,397
Investment Yield	2.3%	28.2%
Actuarial Value of Assets	27,258,531	29,800,918
Investment Yield	5.0%	11.8%
Actuarial Present Values		
Accrued Liability	32,071,575	35,171,396
- Actuarial Value of Assets	27,258,531	29,800,918
Unfunded Accrued Liability	4,813,044	5,370,478
Funded Ratio (Market Value Basis)	82.2%	94.1%
Funded Ratio (Actuarial Value Basis)	85.0%	84.7%
Costs and Contributions		
Normal Cost	267,260	324,322
% of Covered Payroll	10.6%	12.9%
Actuarially Determined Contribution (ADC)	1,230,482	977,511
% of Covered Payroll*	48.6%	38.9%
Funded Status of Accumulated Benefits		
Present Value of Accrued Benefits	30,657,028	33,744,681
Funded Ratio (Market Value Basis)	86.0%	98.1%
Funded Ratio (Actuarial Value Basis)	88.9%	88.3%

*Since the Plan has been closed to new members since 2006, Active Participant headcount as well as Covered Payroll have steadily declined (in line with expectations). Coupled with the aggressive funding policy (14-year amortization of the pre-2015 UAL), the ADC when expressed as a % of payroll is sharply increased. In dollar terms, the ADC has remained relatively flat and is expected to remain so through 2028. At that time, the pre-2015 UAL will be fully amortized and the ADC will decrease significantly.

Statement of Assets as of June 30, 2021

Assets	Market Value
Cash and cash equivalents	\$264,515
Receiveable investment income	\$34,451
Fixed income	\$9,029,376
Stocks	\$23,770,055
Real estate	\$0
Total Assets	33,098,397
Liabilities	
Payable to brokers for unsettled trades	0
Total Liabilities	0
Net Assets	\$33,098,397

Statement of Income and Disbursements

Market Value of Assets as of July 1, 2020	\$26,373,489
Income	
Employer Contributions	1,271,253
Employee Contributions	89,838
Interest and Dividends	741,075
Net Appreciation/(Depreciation)	6,655,773
Investment Expenses	(37,572)
Total Income	<u>8,720,367</u>
Disbursements	
Employee Benefit Distributions	1,929,682
Administrative Expenses	65,777
Total Expenses	<u>1,995,459</u>
Net Increase (Decrease)	6,724,908
Market Value of Assets as of June 30, 2021	<u><u>\$33,098,397</u></u>
Net Rate of Return	28.2%

Development of Actuarial Value of Assets

1. Actuarial Value Beginning of Year	\$27,258,531
2. Market Value End of Year	33,098,397
3. Market Value Beginning of Year	26,373,489
4. Non-Investment Cash Flows ⁽¹⁾	(568,591)
5. Investment Income	
a. Market Total: (2) - (3) - (4)	7,293,499
b. Assumed Rate of Return	6.75%
c. Expected Investment Return ⁽²⁾	1,761,021
d. Gain/(Loss): (5a) - (5c)	5,532,478
6. Phased-In Recognition of Investment Income	
a. Current Year: (1/3) x (5d)	1,844,159
b. (1/3) of Gain/(Loss) during plan year ending June 30, 2020	(390,836)
c. (1/3) of Gain/(Loss) during plan year ending June 30, 2019	(103,366)
d. Phased-In Investment Gain to be Recognized in Current Year: (6a) + (6b) + (6c)	1,349,957
7. Actuarial Value End of Year: (1) + (4) + (5c) + (6d)	\$29,800,918
8. Excess of Market Value over Actuarial Value: (2) - (7)	3,297,479
9. Approximate Rate of Return on Actuarial Value	11.8%
10. Ratio of Actuarial Value of Assets to Market Value of Assets: (7) / (2)	90.0%
⁽¹⁾ Contributions less benefit payments	
⁽²⁾ Assumed Rate times (3) + (4) times Assumed Rate/2	

Statement of Accrued Benefits

	July 1, 2020	July 1, 2021
1. Accumulated Plan Benefits		
a. Actuarial Present Value of Vested Benefits		
i. Participants currently receiving payments	19,265,030	22,962,084
ii. Active Participants	9,426,772	8,772,561
iii. Deferred Vested Participants	1,586,907	1,683,160
iv. Total Vested Benefits	30,278,709	33,417,805
b. Actuarial Present Value of Non-Vested Benefits	378,319	326,876
c. Total Actuarial Present Value of Accumulated Plan Benefits: (aiv) + (b)	30,657,028	33,744,681
2. Net Assets (Market Value) available for benefits	26,373,489	33,098,397
3. Funded Ratio		
a. Vested Benefits: (2) / (1aiv)	87.1%	99.0%
b. Accumulated Benefits: (2) / (1c)	86.0%	98.1%
4. Net Assets (Actuarial Value) available for benefits	27,258,531	29,800,918
5. Funded Ratio		
a. Vested Benefits: (4) / (1aiv)	90.0%	89.2%
b. Accumulated Benefits: (4) / (1c)	88.9%	88.3%

Development of Actuarially Determined Contribution

July 1, 2021

1. Accrued Liability

a. Active Participants	\$10,526,152
b. Terminated Vested Participants	1,683,160
c. Retired Participants	22,962,084
d. Total	<u>35,171,396</u>

2. Actuarial Value of Assets

29,800,918

3. Funded Ratio: (2) / (1d)

84.7%

4. Covered Payroll

2,510,196

5. Unfunded Actuarial Liability (UAL)

5,370,478

a. Outstanding UAL from July 1, 2015	3,350,156
b. Outstanding UAL after July 1, 2015	2,020,322

6. Normal Cost:

a. Entry Age Normal Cost	324,322
b. Expected Employee Contributions	100,408
i. As a percentage of Covered Payroll: (6b) / (3)	4.0%
c. Employer Normal Cost without Expenses: (6a) - (6b)	223,914
ii. As a percentage of Covered Payroll: (6c) / (3)	8.9%
d. Assumed Administrative Expenses	48,396
e. Employer Normal Cost including Expenses: (6c) + (6d)	272,310

7. 14-Year Amortization of UAL from July 1, 2015

508,958

8. 15-Year Amortization of Additional UAL after July 1, 2015

196,243

9. Employer Cost

a. Actuarially Determined Contribution: (6e) + (7) + (8)	<u>977,511</u>
b. Payable as of the end of the plan year: (9a) x 1.06	1,036,162
c. As a percentage of Covered Payroll: (9a) / (4)	38.9%

Historical Investment Returns on Market Value Basis

Year Ended June 30	Rate of Return				
	Annual	Cumulative	Last 5 Years	Last 10 Years	Last 20 Years
1995	8.09%	8.09%	N/A	N/A	N/A
1996	14.35%	11.18%	N/A	N/A	N/A
1997	18.08%	13.43%	N/A	N/A	N/A
1998	17.31%	14.39%	N/A	N/A	N/A
1999	8.46%	13.18%	13.18%	N/A	N/A
2000	9.27%	12.52%	13.42%	N/A	N/A
2001	-5.76%	9.70%	9.12%	N/A	N/A
2002	-10.64%	6.93%	3.20%	N/A	N/A
2003	1.59%	6.32%	0.28%	N/A	N/A
2004	13.39%	7.01%	1.17%	7.01%	N/A
2005	6.21%	6.93%	0.60%	6.82%	N/A
2006	8.62%	7.07%	3.50%	6.27%	N/A
2007	16.67%	7.78%	9.17%	6.14%	N/A
2008	-8.15%	6.56%	6.99%	3.58%	N/A
2009	-18.25%	4.69%	0.21%	0.69%	N/A
2010	12.16%	5.14%	1.31%	0.95%	N/A
2011	19.62%	5.94%	3.28%	3.39%	N/A
2012	0.23%	5.62%	0.19%	4.58%	N/A
2013	12.87%	5.99%	4.41%	5.69%	N/A
2014	17.86%	6.55%	12.34%	6.10%	6.55%
2015	1.99%	6.33%	10.22%	5.67%	6.24%
2016	1.15%	6.09%	6.58%	4.92%	5.59%
2017	11.43%	6.32%	8.87%	4.44%	5.29%
2018	7.69%	6.37%	7.85%	6.12%	4.84%
2019	5.50%	6.34%	5.48%	8.86%	4.69%
2020	2.30%	6.18%	5.55%	7.86%	4.35%
2021	28.20%	6.92%	10.67%	8.61%	5.97%

Actuarial Methods

Following are brief descriptions of the actuarial cost and asset valuation methods used in the valuation.

Actuarial Cost Method Entry Age Normal

The Entry Age Normal Cost Method on an individual basis is used. Normal costs are computed as a level percentage of pay.

The Unfunded Entry Age Accrued Liability as of July 1, 2015 is amortized over a 10 year period. Each year, the amortization period will decrease by 1 until it reaches 0 years as of July 1, 2025. This period was extended as of July 1, 2021 for an additional 4 years. The amortization period will end as of July 1, 2029. Any subsequent Unfunded Entry Age Accrued Liability is amortized over an open 15 year period.

Asset Valuation Method A three-year smoothed value, with difference between actual investment return and expected investment return recognized in equal installments over a three-year period.

Actuarial Assumptions

Following are the primary actuarial assumptions used in performing the valuation.

Interest Rates 6.00% per annum (effective July 1, 2021), net of investment expenses

Annual Pay Increases 4.00% per year

Mortality Pub-2010 General Amount-Weighted Mortality tables for Employees, Healthy Retirees, Disabled Retirees and Contingent Survivors, male and female rates, with generational projection from 2010 using Scale MP-2020 (improvement scale updates published annually) (effective July 1, 2021)

Turnover Rates are as follows:

Age	Percentage
25	10%
35	8%
45	4%
55	0%

Rate of Disability None assumed.

Retirement Non-Uniformed: Participants are assumed 60% retirement at their Unreduced Early Retirement Age, if it is prior to their Normal Retirement Age. Retirement rates of 5% are assumed between their Unreduced Early Retirement Age and age 65, at which a retirement rate of 100% is assumed.

Uniformed: Retirement rates are as follows:

Age	Percentage
55	60%
56 - 61	5%
62	100%

Administrative Expenses Average of last two years of actual administrative expenses (effective July 1, 2019)

Marriage For retired members, actual marital status and spouse birth date is used. For active members, 100% are assumed married with males assumed three years older than their spouses.

Form of Payment It is assumed that all employees will elect a life annuity with 120 months guaranteed.

Summary of Plan Provisions

A summary of the current primary provisions of the Plan are described below. A complete description of the provisions can be found in the local statutes.

Effective Date	Last restated effective July 1, 2013. Reflects subsequent Ordinance 5656 and Retirement Board resolution dated September 25, 2019.
Eligibility	Full-time employees enter the Plan on the July 1 on or immediately following their completion of two years of continuous employment and attainment of age 21. No Employees hired after May 23, 2006 may enter the Plan.
Employee Contributions	Participants are required to contribute 4% of salary (effective July 1, 2019). Contributions accumulate at an interest rate of 5%.
Credited Service	Elapsed time, in years and completed months, from date of hire.
Final Average Compensation	Average of the high 60 consecutive months in the last 120 months.
Normal Retirement Age	Age 55 for a uniformed participant and age 65 for a non-uniformed participant.
Normal Retirement Benefit	A benefit equal to Final Average Compensation times 1.7% times Credited Service not to exceed 30 years. If a participant elected not to participate in the City's defined contribution plan, then the multiplier would be 2.0%.
Normal Form of Payment	The benefit is payable for 120 months guaranteed and for the member's lifetime, thereafter.
Unreduced Early Retirement Eligibility	The participant will be eligible to retire with an unreduced benefit prior to their Normal Retirement Age when the sum of their age and Credited Service equals 85.
Early Retirement Age	Age 50 with at least 20 years of Credited Service.
Early Retirement Benefit	The actuarial equivalent of a benefit calculated in the same manner as the Normal Retirement Benefit with Final Average Compensation and Credited Service determined as of the Early Retirement Date.
Late Retirement Benefit	If a member remains employed after his Normal Retirement Date, he will receive a monthly benefit equal to the benefit computed using service and pay as of his late retirement date. Benefits commence on the first day of the month following actual retirement.

Summary of Plan Provisions

Pre-Retirement Death Benefit

The Surviving Spouse of a Participant who is actively employed and has satisfied Early or Normal Retirement eligibility requirements is entitled to a Death Benefit determined as if the Participant had retired on his date of death, selected a Joint & 2/3 Survivor Annuity and died the next day.

The Surviving Spouse of any other actively employed vested participant is entitled to a Death Benefit determined as follows:

- i) assume the Participant separated from service on date of death
- ii) survived to the earliest possible retirement eligibility date
- iii) retired with a Joint and 2/3 Survivor Annuity, and
- iv) dies the next day

Vested Termination

Members who terminate employment are eligible for a monthly benefit calculated in the same manner as the Normal Retirement Benefit, multiplied by the applicable vesting percentage:

<u>Sum of Attained Age & Years of Service</u>	<u>Vesting Percentage</u>
50	50%
51	60%
52	70%
53	80%
54	90%
55 and after	100%

However, if a participant has at least 8 years of Credited Service, then they are fully vested.

Refund of Contributions

If a participant terminates employment without a vested benefit, then the participant will receive a refund of contributions with interest. If the sum of benefit payments received by a retiree or beneficiary is less than the sum of contributions with interest, then the difference may be paid to their beneficiary as an additional death benefit.

Optional Forms of Payment

Life Annuity	Joint & 50% Survivor Annuity with Pop-Up
Joint & 50% Survivor Annuity	Joint & (2/3)% Survivor Annuity with Pop-Up
Joint & (2/3)% Survivor Annuity	Joint & 100% Survivor Annuity with Pop-Up
Joint & 100% Survivor Annuity	

Milliman Actuarial Valuation

Distribution of Active Members by Age and by Years of Service

Number of Participants by Age-Service Groups

Attained Age	Years of Service																					
	Under 1		1 to 4		5 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 and up		Total	
	Avg. No.	Comp	Avg. No.	Comp	Avg. No.	Comp	Avg. No.	Comp	Avg. No.	Comp	Avg. No.	Comp	Avg. No.	Comp	Avg. No.	Comp	Avg. No.	Comp	Avg. No.	Comp	Avg. No.	Comp
Under 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	1	N/A	0	0	0	0	0	0	0	0	0	0	1	N/A
40 to 44	0	0	0	0	0	0	0	0	2	N/A	0	0	0	0	0	0	0	0	0	0	2	N/A
45 to 49	0	0	0	0	0	0	0	0	1	N/A	3	N/A	0	0	0	0	0	0	0	0	4	N/A
50 to 54	0	0	0	0	0	0	0	0	3	N/A	2	N/A	4	N/A	1	N/A	0	0	0	0	10	88,266
55 to 59	0	0	0	0	0	0	0	0	2	N/A	3	N/A	0	0	2	N/A	0	0	0	0	7	80,954
60 to 64	0	0	0	0	0	0	0	0	1	N/A	2	N/A	1	N/A	1	N/A	1	N/A	0	0	6	69,868
65 to 69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
70 and up	0	0	0	0	0	0	0	0	1	N/A	0	0	0	0	0	0	0	0	0	0	1	N/A
Total	0	0	0	0	0	0	0	0	11	73,212	10	96,593	5	81,615	4	N/A	1	N/A	0	0	31	83,333

Average Age 54.2

Average Service 22.8

Inactive Participants - Summary by Age

Deferred Vested Participants

Age Group	No. of	Total Monthly Benefit Amount	Average Monthly Benefit Amount
Less than 30	0	\$0	\$0
30 - 34	0	0	0
35 - 39	0	0	0
40 - 44	3	2,410	803
45 - 49	4	2,567	642
50 - 54	2	2,660	1,330
55 - 59	4	4,320	1,080
60 and over	5	4,804	961
Total	18	16,761	931

Retired Participants

Age Group	No. of	Total Monthly Benefit Amount	Average Monthly Benefit Amount
Less than 55	0	\$0	\$0
55 - 59	10	25,905	2,591
60 - 64	14	33,921	2,423
65 - 70	19	50,151	2,640
70 - 75	19	30,567	1,609
75 - 80	10	12,669	1,267
80 and over	14	16,650	1,189
Total	86	169,863	1,975

Summary of Changes in Member Data

	Active Participants	Retired Participants	Terminated Vested Participants	Total
Count as of July 1, 2020	35	82	20	137
New Entrants	0	0	0	0
Rehired	0	0	0	0
Retired	(4)	6	(2)	0
Lump Sum Payouts	0	0	0	0
Died with Beneficiary	0	(1)	0	(1)
New Alternate Payees	0	0	0	0
New Beneficiaries	0	1	0	1
Died without Beneficiary	0	(2)	0	(2)
Certain Period Expired	0	0	0	0
Terminated with Vesting	0	0	0	0
Terminated without Vesting	0	0	0	0
Data Corrections	0	0	0	0
Total Changes	(4)	4	(2)	(2)
Count as of July 1, 2021	31	86	18	135

Actuarial Standard of Practice 51 (ASOP 51)

The purpose of this section is to identify, assess, and provide illustrations of risks that are significant to the Plan, and in some cases to the Plan's participants.

The results of the actuarial valuation are based on one set of reasonable assumptions. However, it is almost certain that future experience will not exactly match the assumptions. As an example, investments may perform better or worse than assumed in any single year and over any longer time horizon. It is therefore important to consider the potential impacts of these potential differences when making decisions that may affect the future financial health of the Plan, or of the Plan's participants.

In addition, as plans mature they accumulate larger pools of assets and liabilities. This increases the potential risk to plan funding and the finances of those who are responsible for plan funding. As an example, it is more difficult for a plan sponsor to deal with the effects of a 10% investment loss on a plan with \$1 Billion in assets and liabilities than if the same plan sponsor is responsible for a 10% investment loss on a plan with \$1 Million in assets and liabilities. Since pension plans make long-term promises and rely on long-term funding, it is important to consider how mature the plan is today, and how mature it may become in the future.

Actuarial Standard of Practice No. 51 (ASOP 51) addresses these issues by providing actuaries with guidance for assessing and disclosing the risk associated with measuring pension liabilities and the determination of pension plan contributions. Specifically, it directs the actuary to:

- Identify risks that may be significant to the plan.
- Assess the risks identified as significant to the plan.
- Disclose plan maturity measures and historical information that are significant to understanding the plan's risks.

ASOP 51 states that if in the actuary's professional judgment, a more detailed assessment would be significantly beneficial in helping the individuals responsible for the plan to understand the risks identified by the actuary, then the actuary should recommend that such an assessment be performed.

This appendix uses the framework of ASOP 51 to communicate important information about: significant risks to the Plan, the Plan's maturity, and relevant historical Plan data.

Actuarial Standard of Practice 51 (ASOP 51)

Maturity Risk

Definition: This is the potential for total plan liabilities to become more heavily weighted toward inactive liabilities over time.

Identification: The Plan is subject to maturity risk because as Plan assets and liabilities continue to grow, the impact of any gains or losses on the assets or liabilities also becomes larger.

Assessment: Currently assets are equal to 24 times last year's contributions indicating a one-year asset loss of 10% would be equal to 2.4 times last year's contributions.

Retirement Risk

Definition: This is the potential for participants to retire and receive subsidized benefits more valuable than expected.

Identification: This plan has valuable early retirement benefits. If participants retire at earlier ages than anticipated by the actuarial assumptions, it is expected that additional funding will be required.

Investment Risk

Definition: The potential that investment returns will be different than expected.

Identification: To the extent that actual investment returns differ from the assumed investment return, the plan's future assets, funding contributions and funded status may differ significantly from those presented in this valuation.

Interest Rate Risk

Definition: The potential that interest rates will be different than expected.

Identification: The pension liabilities reported herein have been calculated by computing the present value of expected future benefit payments using the interest rate(s) described in the report. If interest rate(s) in future valuations are different from those used in this valuation, future pension liabilities, funding contributions and funded status may differ significantly from those presented in this valuation. As a general rule, using a higher interest rate to compute the present value of future benefit payments will result in a lower pension liability, and vice versa. One aspect that can be used to estimate the impact of different interest rates is the plan's

Assessment: If the interest rate changes by 1%, the estimated percentage change in pension liability is approximately 11%.

Actuarial Standard of Practice 51 (ASOP 51)

Demographic Risks

Definition: The potential that mortality or other demographic experience will be different than expected.

Identification: The pension liabilities reported herein have been calculated by assuming that participants will follow patterns of demographic experience (e.g. mortality, withdrawal, disability, retirement, form of payment election, etc.) as described in the appendix. If actual demographic experience or future demographic assumptions are different from what is assumed to occur in this valuation, future pension liabilities, funding contributions and funded status may differ significantly from those presented in this valuation.

Glossary of Terms

Actuarial Liability	The difference between the actuarial present value of all Fund benefits and the actuarial value of future normal costs. Also referred to as “actuarial accrued liability.”
Actuarial Assumptions	Estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.
Actuarial Cost Method	A mathematical budgeting procedure of allocating the dollar amount of the actuarial present value of retirement fund benefit between future normal cost and actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”
Experience Gain (Loss)	The difference between actual experience and anticipated experience based on the actuarial assumptions during the period between two actuarial valuation dates.
Actuarial Present Value	The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.
Amortization	Paying off an interest-discounted amount with periodic payments of interest and principal, as opposed to paying off with a lump sum payment.
Normal Cost	The actuarial present value of retirement fund benefits allocated to the current year by the actuarial cost method.
Unfunded Actuarial Liability	The difference between actuarial liability and the valuation assets. Most retirement systems have unfunded actuarial liability. They arise each time new benefits are added, each time an actuarial loss is realized and when actuarial assumptions are modified.
Accumulated Benefits	Sometimes referred to as Accrued Benefits. These are the benefits that have been earned by all plan members as of the valuation date.
Actuarially Determined Contribution	This is the annual contribution determined in accordance with a plan's funding policy - typically the sum of the Normal Cost and an Amortization payment towards the Unfunded Actuarial Liability.



RETIREMENT PLAN FOR EMPLOYEES OF THE CITY OF CREVE COEUR

GASB 67 and 68 DISCLOSURE

Fiscal Year: July 1, 2020 to June 30, 2021

Prepared by

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Certification

Actuarial computations presented in this report under Statements No. 67 and 68 of the Governmental Accounting Standards Board are for purposes of assisting the City of Creve Coeur in fulfilling its financial accounting requirements. No attempt is being made to offer any accounting opinion or advice. This report is for fiscal year July 1, 2020 to June 30, 2021. The reporting date for determining plan assets and obligations is June 30, 2021. The calculations enclosed in this report have been made on a basis consistent with our understanding of the plan provisions. Determinations for purposes other than meeting financial reporting requirements may be significantly different than the results contained in this report. Accordingly, additional determinations may be needed for other purposes, such as judging benefit security or meeting employer funding requirements.

In preparing this report, we relied, without audit, on information as of June 30, 2021 and June 30, 2021 furnished by the City of Creve Coeur. This information includes, but is not limited to, statutory provisions, member census data, and financial information. Please see Milliman's funding valuation report dated October 13, 2021 for more information on the plan's participant group as of June 30, 2021 as well as a summary of the plan provisions and a summary of the actuarial methods and assumptions used for funding purposes.

We performed a limited review of the census and financial information used directly in our analysis and have found them 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.

We hereby certify that, to the best of our knowledge, this report, including all costs and liabilities based on actuarial assumptions and methods, is complete and accurate and determined in conformance with generally recognized and accepted actuarial principles and practices, which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions and supporting Recommendations of the American Academy of Actuaries.

Each of the assumptions used in this valuation with the exception of those set by law was set based on industry standard published tables and data, the particular characteristics of the plan, relevant information from the plan sponsor or other sources about future expectations, and our professional judgment regarding future plan experience. We believe the assumptions are reasonable for the contingencies they are measuring, and are not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

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.

Certification

Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as, but not limited to, 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 the actuarial assignment, we did not perform an analysis of the potential range of such future measurements.

The valuation results were developed using models intended for valuations that use standard actuarial techniques. In addition, Milliman has developed certain models to develop the expected long term rate of return on assets used in this analysis. We have reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice. The models, including all input, calculations, and output may not be appropriate for any other purpose.

Milliman's work is prepared solely for the internal use and benefit of the City of Creve Coeur. 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 exceptions: (a) the Plan Sponsor may provide a copy of Milliman's work, in its entirety, to the Plan Sponsor'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 City of Creve Coeur; and (b) the Plan Sponsor 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 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 actuaries are 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 has been prepared in accordance with generally recognized 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.



Michael Zwiener, FSA, MAAA
Consulting Actuary



William Winningham, EA, MAAA
Consulting Actuary

Overview of GASB 67 and GASB 68

The Governmental Accounting Standards Board (GASB) released accounting standards for public pension plans and participating employers in 2012. These standards, GASB Statements No. 67 and 68, have substantially revised the accounting requirements previously mandated under GASB Statements No. 25 and 27. The most notable change is the distinct separation of funding from financial reporting. The Annual Required Contribution (ARC) has been eliminated under GASB 67 and 68 and is no longer relevant for financial reporting purposes. As a result, plan sponsors have been encouraged to establish a formal funding policy that is separate from financial reporting calculations.

GASB 67 applies to financial reporting for public pension plans and is required to be implemented for plan fiscal years beginning after June 15, 2013. Note that a plan's fiscal year might not be the same as the employer's fiscal year. Even if the plan does not issue standalone financial statements, but rather is considered a pension trust fund of a government, it is subject to GASB 67. Under GASB 67, enhancements to the financial statement disclosures are required, along with certain required supplementary information.

GASB 68 governs the specifics of accounting for public pension plan obligations for participating employers and is required to be implemented for employer fiscal years beginning after June 15, 2014. GASB 68 requires a liability for pension obligations, known as the Net Pension Liability, to be recognized on the balance sheets of participating employers. Changes in the Net Pension Liability will be immediately recognized as Pension Expense on the income statement or reported as deferred inflows/outflows of resources depending on the nature of the change.

Executive Summary

Relationship Between Valuation Date, Measurement Date, and Reporting Date

The Valuation Date is June 30, 2021. This is the date as of which the actuarial valuation is performed. The Measurement Date is June 30, 2021. This is the date as of which the net pension liability is determined. The Reporting Date is June 30, 2021. This is the plan's and/or employer's fiscal year ending date.

Significant Changes

There have been no significant changes between the valuation date and fiscal year end.

Participant Data as of June 30, 2021

Actives	31
Terminated vested & other inactives	18
Retirees and beneficiaries	<u>86</u>
Total	135

Schedule of Employer Contributions

Fiscal Year Ending June 30	Actuarially Determined Contribution	Actual Employer Contribution	Contribution Deficiency (Excess)	Covered Payroll	Contribution as a % of Covered Payroll
2012	\$1,339,314	\$1,389,538	(\$50,224)	\$4,073,539	34.11%
2013	1,204,193	1,261,350	(57,157)	4,016,528	31.40%
2014	1,088,415	1,444,717	(356,302)	3,822,287	37.80%
2015	910,670	1,254,457	(343,787)	3,866,480	32.44%
2016	1,220,627	1,270,404	(49,777)	3,816,272	33.29%
2017	1,139,751	1,200,992	(61,241)	3,557,984	33.75%
2018	1,159,936	1,188,826	(28,890)	3,224,888	36.86%
2019	1,262,474	1,307,755	(45,281)	2,611,428	50.08%
2020	1,252,981	1,303,058	(50,077)	2,532,924	51.44%
2021	1,230,482	1,271,253	(40,771)	2,510,196	50.64%

Actuarial Methods and Assumptions Used for Funding Policy

The following actuarial methods and assumptions were used in the June 30, 2021 funding valuation. Please see the valuation report dated October 13, 2021 for further details.

Valuation Timing	Actuarially determined contribution rates are calculated as of June 30
Actuarial Cost Method	Entry Age Normal
Amortization Method	
Level percent or level dollar	Level percent
Closed, open, or layered periods	Closed, 14 year term for UAL as of 07/01/2015 Open, 15 year period for any UAL arising after 07/01/2015
Asset Valuation Method	
Smoothing period	3 years
Corridor	None
Inflation	2.30%
Salary Increases	4.00%
Investment Rate of Return	6.00%
Retirement Age	Retirement rates are summarized in the 2021 Actuarial Valuation
Turnover	Turnover rates are summarized in the 2021 Actuarial Valuation
Mortality	Pub-2010 General Amount-Weighted Mortality tables for Employees, Healthy Retirees, Disabled Retirees and Contingent Survivors, male and female rates, with generational projection from 2010 using Scale MP-2020 (improvement scale updates published annually)

Statement of Fiduciary Net Position

	June 30, 2020	June 30, 2021
Assets		
Cash and cash equivalents	\$711,008	\$264,515
Receivables and prepaid expenses:		
Receivable contributions	0	0
Receivable investment income	49,617	34,451
Receivables from brokers for unsettled trades	0	0
Prepaid expenses	0	0
Total receivables	49,617	34,451
Investments:		
Fixed income	7,737,736	9,029,376
Stocks	17,188,202	23,770,055
Short-term investments	0	0
Real estate	875,211	0
Alternative investments	0	0
Total investments	25,801,149	32,799,431
Invested securities lending cash collateral	0	0
Capital assets net of accumulated depreciation	0	0
Total assets	26,561,774	33,098,397
Liabilities		
Accrued expenses and benefits payable	0	0
Securities lending cash collateral	0	0
Payable to brokers for unsettled trades	188,285	0
Total liabilities	188,285	0
Net position restricted for pensions	\$26,373,489	\$33,098,397

Statement of Changes in Fiduciary Net Position

	<u>June 30, 2021</u>
Additions	
Member contributions	\$89,838
Employer contributions	1,271,253
Total contributions	<u>1,361,091</u>
Investment income (loss):	
Interest and dividends	741,075
Net increase in fair value of investments	6,655,773
Less investment expenses:	
Direct investment expense	37,572
Net investment income	<u>7,359,276</u>
Other income	0
Total additions	<u>8,720,367</u>
Deductions	
Service benefits	1,929,682
Disability benefits	N/A
Death benefits	N/A
Refunds of member contributions	N/A
Administrative expenses	65,777
Total deductions	<u>1,995,459</u>
Net increase (decrease)	6,724,908
Net position restricted for pensions	
Beginning of year (June 30, 2020)	26,373,489
End of year (June 30, 2021)	<u><u>\$33,098,397</u></u>

Money-Weighted Rate of Return

Fiscal Year Ending June 30	Net Money-Weighted Rate of Return
2012	0.23%
2013	12.87%
2014	17.86%
2015	1.99%
2016	1.15%
2017	11.43%
2018	7.83%
2019	5.69%
2020	2.46%
2021	27.90%

Calculation of Money-Weighted Rate of Return

The money-weighted rate of return considers the changing amounts actually invested during a period and weights the amount of pension plan investments by the proportion of time they are available to earn a return during that period. External cash flows are determined on a monthly basis and are assumed to occur at the beginning of each month. External cash inflows are netted with external cash outflows, resulting in a net external cash flow in each month. The money-weighted rate of return is calculated net of investment expenses.

	Net External Cash Flows	Periods Invested	Period Weight	Net External Cash Flows With Interest
Beginning Value - July 1, 2020	\$26,373,489	12.00	1.00	\$33,730,948
Monthly net external cash flows:				
July	(169,079)	12.00	1.00	(216,247)
August	200,478	11.00	0.92	251,408
September	(148,264)	10.00	0.83	(181,857)
October	763,176	9.00	0.75	917,847
November	(169,479)	8.00	0.67	(199,854)
December	(149,452)	7.00	0.58	(172,378)
January	(149,584)	6.00	0.50	(169,167)
February	(153,049)	5.00	0.42	(169,712)
March	(152,572)	4.00	0.33	(165,478)
April	(156,819)	3.00	0.25	(166,768)
May	(160,666)	2.00	0.17	(167,529)
June	(189,058)	1.00	0.08	(192,816)
Ending Value - June 30, 2021	33,098,397			33,098,397
Money-Weighted Rate of Return	27.90%			

Long-Term Expected Rate of Return

The assumption for the long-term expected rate of return is determined by adding expected inflation to expected long-term real returns and reflecting expected volatility and correlation. The capital market assumptions are per Milliman's investment consulting practice as of June 30, 2021.

Asset Class	Target Allocation	Long-Term Expected Arithmetic Real Rate of Return
US Cash	1.00%	N/A*
US Core Fixed Income	27.00%	1.37%
US Large Caps	36.00%	5.15%
US Small Caps	2.00%	6.58%
US Mid Caps	1.00%	5.71%
US Large Value	6.00%	5.14%
US Small Value	1.00%	6.05%
Foreign Developed Equity	17.00%	6.27%
Emerging Markets Equity	9.00%	8.64%
Assumed Inflation - Mean		2.30%
Long-Term Expected Rate of Return		6.00%

*Expected to earn less than inflation

Depletion Date Projection

GASB 67 and 68 generally require that a blended discount rate be used to measure the Total Pension Liability (the Actuarial Accrued Liability calculated using the Individual Entry Age Normal Cost Method). The long-term expected return on plan investments may be used to discount liabilities to the extent that the plan's Fiduciary Net Position (fair market value of assets) is projected to cover benefit payments and administrative expenses. A 20-year high quality (AA/Aa or higher) municipal bond rate must be used for periods where the Fiduciary Net Position is not projected to cover benefit payments and administrative expenses. Determining the discount rate under GASB 67 and 68 will often require that the actuary perform complex projections of future benefit payments and asset values. GASB 67 and 68 (paragraph 29) do allow for alternative evaluations of projected solvency, if such evaluation can reliably be made. GASB does not contemplate a specific method for making an alternative evaluation of sufficiency; it is left to professional judgment.

The following circumstances justify an alternative evaluation of sufficiency for the City of Creve Coeur:

- The City of Creve Coeur has at least a 5-year history of paying at least 100% of the Actuarially Determined Contribution (previously termed the Annual Required Contribution).
- The Actuarially Determined Contribution is based on a closed amortization period for the majority of the unfunded liability and a 15 year amortization for unfunded liability realized since July 1, 2015.
- GASB 67 and 68 specify that the projections regarding future solvency assume that plan assets earn the assumed rate of return and there are no future changes in the plan provisions or actuarial methods and assumptions, which means that the projections would not reflect any adverse future experience which might impact the plan's funded position.

Based on these circumstances, it is our professional opinion that the detailed depletion date projections outlined in GASB 67 and 68 will show that the Fiduciary Net Position is always projected to be sufficient to cover benefit payments and administrative expenses.

Net Pension Liability

Net Pension Liability	June 30, 2020	June 30, 2021
Total pension liability	\$32,071,575	\$35,171,396
Fiduciary net position	26,373,489	33,098,397
Net pension liability	5,698,086	2,072,999
Fiduciary net position as a % of total pension liability	82.23%	94.11%
Covered payroll	2,532,924	2,510,196
Net pension liability as a % of covered payroll	224.96%	82.58%

The total pension liability was determined by an actuarial valuation as of the measurement date, calculated based on the discount rate and actuarial assumptions below.

Discount Rate

Discount rate	6.75%	6.00%
Long-term expected rate of return, net of investment expense	6.75%	6.00%
Municipal bond rate	N/A	N/A

The plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the discount rate for calculating the total pension liability is equal to the long-term expected rate of return.

Other Key Actuarial Assumptions

The plan has not had a formal actuarial experience study performed.

Valuation date	June 30, 2020	June 30, 2021
Measurement date	June 30, 2020	June 30, 2021
Actuarial cost method	Entry Age Normal	Entry Age Normal
Inflation	2.50%	2.30%
Salary increases including inflation	4.00%	4.00%
Mortality	RP-2000 Combined Healthy Table with a 70% Blue Collar adjustment with a fully generational projection of mortality improvement using Scale BB	Pub-2010 General Amount-Weighted Mortality tables for Employees, Healthy Retirees, Disabled Retirees and Contingent Survivors, male and female rates, with generational projection from 2010 using Scale MP-2020 (improvement scale updates published annually)

Please see Milliman's funding valuation report dated October 13, 2021 for more detail.

Changes in Net Pension Liability

Changes in Net Pension Liability	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances as of June 30, 2020	\$32,071,575	\$26,373,489	\$5,698,086
Changes for the year:			
Service cost	267,260		267,260
Interest on total pension liability	2,118,808		2,118,808
Effect of plan changes	(2,229)		(2,229)
Effect of economic/demographic gains or losses	(200,891)		(200,891)
Effect of assumptions changes or inputs	2,846,555		2,846,555
Benefit payments	(1,929,682)	(1,929,682)	0
Employer contributions		1,271,253	(1,271,253)
Member contributions		89,838	(89,838)
Net investment income		7,359,276	(7,359,276)
Administrative expenses		(65,777)	65,777
Balances as of June 30, 2021	35,171,396	33,098,397	2,072,999

Sensitivity Analysis

The following presents the net pension liability of the City of Creve Coeur, calculated using the discount rate of 6.00%, as well as what the City of Creve Coeur's net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower (5.00%) or 1 percentage point higher (7.00%) than the current rate.

	1% Decrease 5.00%	Current Discount Rate 6.00%	1% Increase 7.00%
Total pension liability	\$39,020,817	\$35,171,396	\$31,901,456
Fiduciary net position	33,098,397	33,098,397	33,098,397
Net pension liability	5,922,420	2,072,999	(1,196,941)

Milliman Financial Reporting Valuation

Schedule of Changes in Net Pension Liability and Related Ratios

	Fiscal Year Ending June 30									
	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Total Pension Liability										
Service cost	\$267,260	\$272,815	\$291,592	\$255,915	\$409,425	\$424,445	\$371,341	\$447,610	N/A	N/A
Interest on total pension liability	2,118,808	2,132,606	2,124,982	2,089,956	2,059,465	1,994,674	1,918,318	1,827,698	N/A	N/A
Effect of plan changes	(2,229)	(120,161)	0	0	0	0	0	0	N/A	N/A
Effect of economic/demographic gains or losses	(200,891)	(344,009)	(208,439)	187,078	(279,360)	21,701	64,357	3,949	N/A	N/A
Effect of assumption changes or inputs	2,846,555	0	0	793,015	0	0	1,832,668	0	N/A	N/A
Benefit payments	(1,929,682)	(2,343,780)	(1,817,650)	(1,657,854)	(1,544,910)	(1,457,024)	(1,392,018)	(1,508,007)	N/A	N/A
Net change in total pension liability	3,099,821	(402,529)	390,485	1,668,110	644,620	983,796	2,794,666	771,250	N/A	N/A
Total pension liability, beginning	32,071,575	32,474,104	32,083,619	30,415,509	29,770,889	28,787,093	25,992,427	25,221,177	N/A	N/A
Total pension liability, ending (a)	35,171,396	32,071,575	32,474,104	32,083,619	30,415,509	29,770,889	28,787,093	25,992,427	N/A	N/A
Fiduciary Net Position										
Employer contributions	\$1,271,253	\$1,303,058	\$1,307,755	\$1,188,826	\$1,200,992	\$1,270,402	\$1,254,457	\$1,444,717	N/A	N/A
Member contributions	89,838	96,152	86,614	99,041	107,272	112,251	93,099	74,183	N/A	N/A
Net investment income	7,359,276	630,154	1,464,646	1,893,838	2,499,524	251,339	426,117	3,245,642	N/A	N/A
Benefit payments	(1,929,682)	(2,343,780)	(1,817,650)	(1,657,854)	(1,544,910)	(1,457,024)	(1,392,017)	(1,508,007)	N/A	N/A
Administrative expenses	(65,777)	(31,015)	(52,266)	(44,133)	0	0	0	0	N/A	N/A
Net change in plan fiduciary net position	6,724,908	(345,431)	989,099	1,479,718	2,262,878	176,968	381,656	3,256,535	N/A	N/A
Fiduciary net position, beginning	26,373,489	26,718,920	25,729,821	24,250,103	21,987,225	21,810,257	21,428,601	18,172,066	N/A	N/A
Fiduciary net position, ending (b)	33,098,397	26,373,489	26,718,920	25,729,821	24,250,103	21,987,225	21,810,257	21,428,601	N/A	N/A
Net pension liability, ending = (a) - (b)	\$2,072,999	\$5,698,086	\$5,755,184	\$6,353,798	\$6,165,406	\$7,783,664	\$6,976,836	\$4,563,826	N/A	N/A
Fiduciary net position as a % of total pension liability	94.11%	82.23%	82.28%	80.20%	79.73%	73.85%	75.76%	82.44%	N/A	N/A
Covered payroll	\$2,510,196	\$2,532,924	\$2,611,428	\$3,224,888	\$3,557,984	\$3,816,272	\$3,866,480	\$3,822,287	N/A	N/A
Net pension liability as a % of covered payroll	82.58%	224.96%	220.38%	197.02%	173.28%	203.96%	180.44%	119.40%	N/A	N/A

This schedule is presented to illustrate the requirement to show information for 10 years. However, recalculations of prior years are not required, and if prior years are not reported in accordance with the current GASB standards, they should not be reported.

Pension Expense

Pension Expense	July 1, 2019 to June 30, 2020	July 1, 2020 to June 30, 2021
Service cost	\$272,815	\$267,260
Interest on total pension liability	2,132,606	2,118,808
Effect of plan changes	(120,161)	(2,229)
Administrative expenses	31,015	65,777
Member contributions	(96,152)	(89,838)
Expected investment return net of investment expenses	(1,771,139)	(1,759,150)
Recognition of Deferred Inflows/Outflows of Resources		
Recognition of economic/demographic gains or losses	(315,201)	(252,820)
Recognition of assumption changes or inputs	0	2,189,658
Recognition of investment gains or losses	298,199	(1,076,391)
Pension Expense	431,982	1,461,075

As of June 30, 2021, the deferred inflows and outflows of resources are as follows:

Deferred Inflows / Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources
Differences between expected and actual experience	(\$46,359)	\$0
Changes of assumptions	0	656,897
Net difference between projected and actual earnings	(3,735,095)	0
Contributions made subsequent to measurement date	0	0
Total	(3,781,454)	656,897

Amounts currently reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year ended June 30:	
2022	(\$272,140)
2023	(840,563)
2024	(891,828)
2025	(1,120,026)
2026	0
Thereafter*	0

* Note that additional future deferred inflows and outflows of resources may impact these numbers.

Schedule of Deferred Inflows and Outflows of Resources

	Original Amount	Date Established	Original Rec. Period*	Amount Recognized in Pension Expense for FYE 06/30/2021	Amount Recognized in Pension Expense through 06/30/2021	Balance of Deferred Inflows as of 06/30/2021	Balance of Deferred Outflows as of 06/30/2021
Economic/ demographic gains or losses	(\$200,891)	6/30/2021	1.3	(\$154,532)	(\$154,532)	(\$46,359)	\$0
	(344,009)	6/30/2020	1.4	(98,288)	(344,009)	0	0
		Total		(252,820)	(498,541)	(46,359)	0
Assumption changes or inputs	2,846,555	6/30/2021	1.3	2,189,658	2,189,658	0	656,897
		Total		2,189,658	2,189,658	0	656,897
Investment gains or losses	(5,600,126)	6/30/2021	5.0	(1,120,025)	(1,120,025)	(4,480,101)	0
	1,140,985	6/30/2020	5.0	228,197	456,394	0	684,591
	256,329	6/30/2019	5.0	51,266	153,798	0	102,531
	(210,580)	6/30/2018	5.0	(42,116)	(168,464)	(42,116)	0
	(968,561)	6/30/2017	5.0	(193,713)	(968,561)	0	0
		Total		(1,076,391)	(1,646,858)	(4,522,217)	787,122
Total for economic/demographic gains or losses and assumption changes or inputs						(46,359)	656,897
Net deferred (inflows)/outflows for investment gains or losses						(3,735,095)	0
Total deferred (inflows)/outflows						(3,781,454)	656,897
Total net deferrals						(3,124,557)	

* Investment (gains)/losses are recognized in pension expense over a period of five years; economic/demographic (gains)/losses and assumption changes or inputs are recognized over the average remaining service life for all active and inactive members.

Milliman Financial Reporting Valuation

	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability	Deferred (Inflows)	Deferred Outflows	Net Investment (Inflows)/ Outflows	Net Deferrals	Net Pension Liability plus Net Deferrals	Annual Expense
Balances as of June 30, 2020	(\$32,071,575)	\$26,373,489	(\$5,698,086)	(\$98,288)	\$0	\$788,640	\$690,352	(\$5,007,734)	
Service cost	(267,260)		(267,260)						267,260
Interest on total pension liability	(2,118,808)		(2,118,808)						2,118,808
Effect of plan changes	2,229		2,229						(2,229)
Effect of liability gains or losses	200,891		200,891	(200,891)			(200,891)		
Effect of assumption changes or inputs	(2,846,555)		(2,846,555)		2,846,555		2,846,555		
Benefit payments	1,929,682	(1,929,682)	0						
Administrative expenses		(65,777)	(65,777)						65,777
Member contributions		89,838	89,838						(89,838)
Expected net investment income		1,759,150	1,759,150						(1,759,150)
Investment gains or losses		5,600,126	5,600,126			(5,600,126)	(5,600,126)		
Employer contributions		1,271,253	1,271,253					1,271,253	
Recognition of liability gains or losses				252,820			252,820		(252,820)
Recognition of assumption changes or inputs					(2,189,658)		(2,189,658)		2,189,658
Recognition of investment gains or losses						1,076,391	1,076,391		(1,076,391)
Annual expense								(1,461,075)	1,461,075
Balances as of June 30, 2021	(35,171,396)	33,098,397	(2,072,999)	(46,359)	656,897	(3,735,095)	(3,124,557)	(5,197,556)	

Retirement Plan for Employees of the City of Creve Coeur

This work product was prepared solely for the City of Creve Coeur for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

Glossary

Actuarially Determined Contribution	A target or recommended contribution to a defined benefit pension plan for the reporting period, determined based on the funding policy and most recent measurement available when the contribution for the reporting period was adopted.
Deferred Inflows/Outflows of Resources	Portion of changes in net pension liability that is not immediately recognized in Pension Expense. These changes include differences between expected and actual experience, changes in assumptions, and differences between expected and actual earnings on plan investments.
Discount Rate	Single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the sum of: 1) The actuarial present value of benefit payments projected to be made in future periods where the plan assets are projected to be sufficient to meet benefit payments, calculated using the Long-Term Expected Rate of Return. 2) The actuarial present value of projected benefit payments not included in (1), calculated using the Municipal Bond Rate.
Fiduciary Net Position	Equal to market value of assets.
Long-Term Expected Rate of Return	Long-term expected rate of return on pension plan investments expected to be used to finance the payment of benefits, net of investment expenses.
Money-Weighted Rate of Return	The internal rate of return on pension plan investments, net of investment expenses.
Municipal Bond Rate	Yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.
Net Pension Liability	Total Pension Liability minus the Plan's Fiduciary Net Position (unfunded accrued liability).
Projected Benefit Payments	All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and expected future service.
Service Cost	The portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
Total Pension Liability	The portion of actuarial present value of projected benefit payments that is attributable to past periods of member service using the Entry Age Normal cost method based on the requirements of GASB 67 and 68.



MEMORANDUM

DATE: October 20, 2021

TO: Mark Perkins, City Administrator

FROM: Lori Obermoeller, Director of Finance

SUBJECT: Annual Pension Contribution

The Employee Pension Board met on October 19, 2021 to discuss the annual actuarial report prepared by Michael Zwiener of Milliman, Inc. In that report the actuary has recommended an annual contribution for FY 2022 of \$977,511. This computation was made based on the following assumptions adopted by the Employee Pension Fund Board of Trustees. The assumptions are as follows:

1. Rate of Return – 6.00% (dropped from 6.75% in July 2021).
2. Amortization Period – The amortization period was changed to 10-year fixed for unfunded liability as of the October 2015 actuarial report. And then extended another 4 years in July 2021. Any additional unfunded liability after that date will be amortized on a 15-year rolling time period. (The previous amortization period for the unfunded liability was amortized on a 15-year rolling time period.)
3. 4% annual salary increase.

The actuarially determined contribution (ADC) is \$252,971 less than last year. Because the rate of return was dropped and the mortality table was changing in July 2021, the 10-year fixed unfunded liability was extended another four years to try to keep the ADC close to what it was in the past years. However, because the Plan experienced a 28.2% return on investments in FY 2021, the ADC actually decreased.

The total annual contribution will be \$327,572 less than the budgeted amount of \$1,305,083. The Pension Board discussed whether this might be the time to look at a COLA for current retirees since the last COLA was provided in 2002. As a reminder, several retirees submitted letters last spring to the City requesting that a COLA be addressed. At that time, the City Council decided not to move forward with a COLA due to the cost, the expectation of the Plan falling short of the required 80% funding level as a result of the rate of return and the mortality table changes, and due to the continued financial uncertainty of the pandemic.

I have attached a copy of the last COLA analysis completed by Conduent in 2017, a memo from Milliman in January 2021 on a COLA, and some Pension Facts that was provided to City Council in April 2021. Should the City Council decide to revisit the COLA option, these documents should help restate some of the facts that may come up at the joint work session with the Pension Board or help in future discussions.

The City Council could elect to contribute the full budgeted amount of \$1.3 million, but staff has prepared the authorizing resolution to reflect the actuary's recommendation of \$977,511, plus interest. \$176,335 of the second payment will come from the Public Safety Sales Tax Fund and \$1,208 will come from the Sewer Lateral Fund. The remaining balance of \$104,055.30 will be taken from the General Fund. An additional amount can always be made at any time throughout the year, as well as any discussion to Plan benefits.

The city made the 1st quarterly payment for FY 2022 on 7/20/21 in the amount of \$705,518.46 (\$701,271 for principal and \$4,248 for interest). Staff is recommending that the remaining contributions be made on October 26, 2021 in the amount of \$281,598.30 (\$276,240 for principal and \$5,358 for interest). Since the actuarial computation is based upon an amount computed at July 1, 2021, additional interest at the Plans assumed rate of 6.00% is required for anything paid after July 1, 2021.

I would be happy to respond to any questions.



231 South Bemiston Avenue
Suite 400
St. Louis, MO 63105

February 22, 2017

VIA EMAIL

Mr. Dan Smith
Director of Finance
City of Creve Coeur
300 N. New Ballas Road
Creve Coeur, MO 63141

Dear Dan:

At your request, we have prepared a cost study for a possible COLA increase to in-payment participants of the Retirement Plan for Employees of the City of Creve Coeur. This letter will document our analysis.

Background

The last COLA for retirees and beneficiaries was effective January 1, 2002, providing a 1.75% increase for each full year since the participant's retirement date. A similar increase structure is considered for this analysis, applying a flat percentage increase for each full year since the later of the participant's retirement date and July 1, 2001 (the cutoff date used in the prior increase). The analysis assumes that the increase would be through June 30, 2017 and be effective July 1, 2017. A 1.00% multiplier was used for this analysis, which allows for easy scaling of the result to fit your budget.

Analysis

The estimated impact of this possible COLA was measured using the July 1, 2016 valuation data. The affected population is comprised of 66 retired participants as well as 2 beneficiaries in-payment status. As of July 1, 2017, applying a COLA as described above is estimated to increase liabilities by \$1.4 million. This change would directly increase the plan's unfunded liability and, when amortized over 15 years, would increase the annual employer cost by approximately \$140,000 annually.

Actuarial Certification

The economic and demographic assumptions as well as the participant data used for this analysis are as summarized in our July 1, 2016 valuation report.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, changes expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions, applicable law or regulations. An analysis of the potential range of such future differences is beyond the scope of this project.

The results were prepared under the supervision of Wendy Ludbrook, a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries, who has met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

If you have any questions, please feel free to contact me.

Sincerely,

Wendy Ludbrook, FSA., EA, MAAA
Senior Consultant, Retirement Consulting Actuary



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 www.milliman.com

MEMORANDUM

TO: Lori Obermoeller

FROM: Michael Zwiener *MZ*

DATE: January 22, 2021

RE: *Pension Plan – Potential Benefit Modifications*

This memo is to follow up on a couple of topics raised at the Pension Board meeting earlier this week as well as our subsequent telephone call. The potential for benefit improvements in two different areas has been raised as a topic. This memo is meant to provide a bit of background, provide an educated guess as to what specifically is being requested and a general idea of actuarial study fees that would be involved if any of this is pursued.

A. COLA

A COLA (cost of living adjustment) is a tool to help preserve the purchasing power of a retiree's monthly benefit from the effects of inflation. At the point of retirement, a member's benefit is based on their recent pay levels and is therefore generally in line with price/inflation levels at that point in time. The longer a retiree is in pay status, the greater the impact of inflation simply due to the passage of time. For example, the monthly benefit of a retiree who retired 20 years ago has endured the impact of inflation for 20 years while the member who retired last year is essentially current.

With this as a background, we can see that there is an infinite number of ways to design a COLA feature. One approach would be the type of arrangement analyzed and priced by Conduent in their February 22, 2017 correspondence to the City. (copy attached) Briefly, they analyzed a benefit increase of 1% for each year that a retiree has been receiving benefits. Thus, a member who retired in 2005 would receive a 16% increase while a member who retired in 2019 would receive a 2% increase. This is efficient from a theoretical standpoint as the members whose benefits have suffered inflationary erosion the longest have the larger adjustments. The downside is cost – Conduent indicated this improvement would require plan funding to increase \$140,000/yr. for 15 years. Presumably, it would cost at least as much if implemented today. Cost containment measures could be designed in - obvious ones include cutting the 1% to 0.5% or setting a maximum possible adjustment to say 8 or 10%.



At the other end of the complexity spectrum, a simple, across-the-board adjustment, e.g. 2%, could be made to the benefits of all retirees. This is simple and less costly. However, it fails in materially addressing the loss in purchasing power experienced by long time retirees.

Note that all of the above is based on the premise that any change is applicable to retirees existing on a particular date, e.g. July 1, 2021. It would have no impact on members not yet retired.

B. Pop-Up Benefit

The Plan's Normal Form of benefit is a Ten Years Certain and Life Annuity (we'll designate this as 10CL for the discussion here). When a member retires and his/her service and pay is applied to the benefit formula, the resulting monthly dollar amount is paid in the 10CL form.

The Plan offers optional forms of payment that a member may irrevocably chose among at the point of retirement. The three under discussion here are the three Joint and Survivor Annuity (J&S) options. These three options provide a lifetime benefit to the member as well as a surviving spouse benefit in an amount of 50%, 66 2/3% or 100% of the original benefit in the event the member predeceases the spouse.

The Plan provides that these optional forms of payment are to be of equal actuarial value to the 10CL Normal Form of payment. This is accomplished by reducing the J&S monthly benefits by an amount that "pays" for this surviving spouse death benefit protection.

An example is by far the most efficient means to illustrate how this works.

Assume a married member retires today. Application of the benefit formula to his/her service and pay history produces a monthly benefit of \$1,000. This amount will by definition be paid in the Plan's 10 CL Normal Form.

However, the member may choose an alternative J&S form of payment. Depending on the unique combination of the member's and spouse's ages, the actuarially equivalent forms turn out as follows:

J&S 50	\$975
J&S 66 2/3	\$960
J&S 100	\$940



If our member chose the J&S 50 alternative, he/she would receive \$975 for life. If the member predeceases the spouse, the spouse would receive 50% of \$975 for the remainder of their life.

Which finally brings us to the Pop-Up. Assume the member chose the J&S 50 form of payment. Payments of \$975 commence. Then assume the spouse dies. Under current plan rules (no Pop-up) the member continues to receive \$975 until death. Under the Pop-Up, the member's benefit would instead "Pop-Up" to the unreduced \$1,000 Normal form of payment.

So we can see that there is a potential for a higher benefit amount to be paid than under current plan provisions so there is obviously some type of cost involved. If the member "pays" for the Pop-Up protection it is done by adjusting the initial monthly benefit amount. Referring back to the above example, the member would now have 6 J&S options instead of the current 3 (dollar amounts are for illustration only):

	Without Pop-Up	With Pop-Up
J&S 50	\$975	\$962
J&S 66 2/3	\$960	\$945
J&S 100	\$940	\$923

Alternatively, the Plan could simply absorb the cost of the Pop-Up so the Member would continue to receive the \$975/960/940 amounts in the above example.

Finally, I heard a comment at the Pension Board meeting about extending the Pop-Up coverage, to current retirees. This would essentially require the Fund to absorb any associate cost since current retirees have already been through the benefit election process.

C. Costs

I have written all this out as there are many potential variations possible under either of these proposals. I've laid out what I would specifically look at in a study. Alternatively, this provides an opportunity for interested parties to comment, ask for modifications and so on. The general idea is to avoid having the Fund and/or City incur the time and expense of performing an analysis that "misses the mark".

Regarding the COLA, we would essentially update the 2017 Conduent study using current member data. The 1% annual increase is a good idea as it allows for simple scaling, e.g. ½% annual increase costs 50% of a 1% increase. We would also cost a couple of other simple modifications such as a maximum benefit increase. The cost would be in the \$750-\$1,000 range.



Regarding the Pop-Up, we would determine the benefit reduction factors that would be involved for a sampling of retiree/spouse ages. We would also determine the annual cost impact to the Fund if the fund has to absorb any costs. The cost for this sub-project would be in the \$600 - \$750 range.

Any analysis of extending the Pop-Up factor to existing retirees would be on a time and expense basis. The reason I cannot quote a fixed fee (at least at this time) is I am unsure if all data is readily available. For example, for a member who retired in 2002, electing the J&S50 form of payment, does record of the 10CL payment form still exist? Will there be any retroactive aspects to explore such as someone who could have gotten the Pop-Up if it had been in place a year or two ago? And so on.

After you have had an opportunity to review this memo, please contact me with any questions. We are available to commence work upon authorization to do so.

Enclosure

**Below are several Pension Facts
for the Retirement Plan for Employees of the City of Creve Coeur
April 2021**

COLA

Different ways to do COLA:

1. Give Retiree a Percentage for each year using the later of the participant's retirement date and July 1, 2001 - Per Conduent's estimate in 2017, a 1% COLA would cost the City \$140K more per year
2. Simpler across-the-board adjustment, e.g. 2% to all current retirees. Disadvantage is that it gives all retirees the same and does not take into consideration the length of time they have been retired, e.g. 1 year retiree gets the same as 25 year retiree. This would increase the ADC about \$40K annually.

Cost for Milliman to do a COLA study would be in the \$750 - \$1,000 range.

Can't do a COLA once the funding level goes below 80%. We are currently at 85%. Based on all of the Pension Board recommendations, the Plan will go down to about 73%.

City's Annual Payment (ADC)

Changing the interest rate assumption - Good rule of thumb for figuring the annual payment is that every quarter point decrease in the interest rate assumption causes the payment to increase by about \$100-\$112K per year. So based on going from 6.75% to 6%, we can estimate the City's payment to increase \$300K to \$350K

Funding Ratio

Changing the interest rate assumption - Good rule of thumb for figuring how that decrease in interest rate affects the funding ratio is every quarter percentage decrease, the funding ratio will decrease 3%. So based on us going from 6.75% to 6%, we can estimate the funding ratio to drop from 85% 76%.

Mortality Table

The Mortality Table change will increase the City's contribution by about \$100K and decrease the funding ratio by 2.5%

Extending the 10 Year Fixed Amortization Table

Extending the amortization table another 4 years (as the Pension Board agreed to do) will offset most of the City's increased payment as a result of the new Mortality Table and decreased Interest Rate Assumption. The extension will decrease the ADC by about \$420K, where the ADC will increase about \$450K as a result of the drop in interest rate assumption and change in the mortality table, which means a net difference of \$30K increase in the ADC or a relatively flat increase.

**Below are several Pension Facts
for the Retirement Plan for Employees of the City of Creve Coeur
April 2021**

45 Day Public Notice Period

There is a 45 Day Public Notice Period for any changes to the Plan. Any changes regarding the COLA would need to be done by August.

Other Options

There are a variety of other options if the council wants to give a COLA and still have the payment remain relatively the same as what we have been paying which is around \$1.25M.

- Give 1% COLA, only drop the interest rate from 6.75% to 6.25%, update the mortality table and extend the amortization 5 more years instead of only 4 more...this option will keep the payment roughly the same.
- Give .5% COLA, drop the interest rate from 6.75% to 6%, update the mortality table and extend the amortization 7 more years instead of only 4 more....this option will keep the payment roughly the same.
- Give .75% COLA, drop the interest rate from 6.75% to 6%, update the mortality table and extend the amortization 8 more years instead of only 4 more....this option will increase the payment by about \$25K more per year.
- Give 1% COLA, drop the interest rate from 6.75% to 6%, update the mortality table and extend the amortization 8 more years instead of only 4 more...this option will increase the payment by about \$60K more per year.

These are just a few additional options, there are many more. It just depends on what is the most important to the Council and Pension Board, giving a COLA, dropping the interest rate assumption to the actuary and Pension Board's recommendation, etc.