



July 1, 2018 Actuarial Valuation of the City of Belvedere Retirement Enhancement Plan

Prepared by:

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City of Belvedere Retirement Enhancement Plan

This report presents the results of the July 1, 2018 actuarial valuation of the supplemental pension benefits provided by the City of Belvedere Retirement Enhancement Plan. The results communicated in this report are for purposes of determining the recommended funding level for fiscal years ending June 30, 2020 and June 30, 2021.

The calculations were completed as follows:

- The Retirement Enhancement Plan provides a supplemental retirement benefit for three Tiers of employees under the following conditions:
 - (a) Tier I – Miscellaneous Non-Safety employees hired before January 1, 2013 who have attained age 55 and completed 15 years of continuous service will be eligible for the supplemental benefit upon concurrently terminating employment with the City and retiring under CalPERS.
 - (b) Tier II – Safety employees hired before January 1, 2013 who have attained age 55 and completed 15 years of continuous service will be eligible for the supplemental benefit upon concurrently terminating employment with the City and retiring under CalPERS.
 - (c) Tier III – Employees designated by the Plan Administrator as eligible and set forth in Schedule A who have attained age 55 and completed 13 years of non-continuous service will be eligible for the supplemental benefit upon concurrently terminating employment with the City and retiring under CalPERS; however, Tier III employees were not allowed to retire before December 30, 2007. As of the date of this valuation, there is only one Tier III employee and he is retired.
- The benefit for Tiers I and III is equal to the difference between the CalPERS “2.5% at 55” formula and the CalPERS “2.0% at 55” formula. The Tier II benefit is equal to the difference between the “3.0% at 55” formula and the CalPERS “2.0% at 50” formula.
- Final average compensation is equal to the highest twelve consecutive months of compensation, subject to IRC 401(a)(17) limitations.
- There are no employee contributions.
- The plan does not provide a withdrawal benefit, death benefit, or a disability benefit.
- The normal form for the benefit is life only; the J&S options provided are actuarially equivalent to the life only option.
- Benefits in payment status will increase by 2% per annum on the anniversary of the participant’s date of retirement.
- We have completed the valuation using an interest assumption of 6.50% per annum. This a reduction in the interest rate from the prior valuation, which applied a 7.00% rate. The rate change has been made in conjunction with CalPERS’ decision to lower its interest rate from 7.50% to 7.00% over a period of years.

- We have updated our actuarial assumptions for pre-retirement mortality, post-retirement mortality, salary increases, withdrawal, disability and retirement based on new demographic assumptions resulting from the experience study on the California Public Employees Retirement System released in November 2017 and based on data from 1997-2015. In addition, the payroll growth assumption was lowered from 3.0% to 2.75% and inflation was lowered from 2.75% to 2.50%.
- All other actuarial assumptions are consistent with those used by Milliman in our prior July 1, 2015 valuation report for the City of Belvedere Retirement Enhancement Plan.

Limitations

In preparing this report, we relied, without audit, on information supplied by PARS. This information includes, but is not limited to, plan provisions, employee data, plan assumptions, and financial information provided in your August 22, 2018 email. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the fiscal years ending June 30, 2020 and June 30, 2021. Actuarial computations under GASB Statements No. 67 and 68 are for purposes of fulfilling financial accounting requirements and are provided under a separate report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Plan's funding goals. Determinations for purposes other than meeting those requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work product was prepared exclusively for the management of the City of Belvedere and PARS for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning the City of Belvedere operations, and uses the City of Belvedere data, which Milliman has not audited. 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 City of Belvedere or PARS may provide a copy of Milliman's work, in its entirety, to the Town'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 Plan.
- (b) The City of Belvedere or PARS 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.

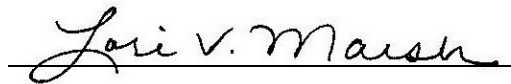
Certification

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 which are consistent with the actuarial standards of Practice promulgated by the Actuarial Standards Board and applicable Guides to Professional Conduct, amplifying Opinions, and supporting Recommendations of the American Academy of Actuaries.

We further certify that 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 CalPERS and reasonable expectations. Nevertheless, the emerging costs will vary from those presented in this report to the extent actual experience differs from that projected by the actuarial assumptions.

We respectfully submit the following report, and we look forward to discussing it with you at your convenience. I, Lori V. Marsh, am a consulting actuary for Milliman, Inc. I am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sincerely,



Lori V. Marsh, ASA, EA
Consulting Actuary

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Exhibit 1

Summary of Results

Valuation Results as of July 1, 2018

Investment Rate of Return Assumption	6.50%
Payroll Growth Assumption	2.75%
1. Present Value of Future Benefits	
a. Active Participants	\$566,589
b. Retirees and Beneficiaries	<u>318,906</u>
c. Total	\$885,495
2. Present Value of Future Normal Costs	
a. Active Participants	\$74,640
b. Retirees and Beneficiaries	<u>0</u>
c. Total	\$74,640
3. Actuarial Liability: [(1c) – (2c)]	
a. Active Participants	\$491,949
b. Retirees and Beneficiaries	<u>318,906</u>
c. Total	\$810,855
4. Normal Cost (NC)	
a. NC as of July 1, 2018	\$13,075
b. NC as of July 1, 2019 [(a) x (1.0275)]	\$13,435
5. Actuarial Value of Assets	\$635,541
6. Unfunded Actuarial Liability (UAL)	
a. UAL as of July 1, 2018 [3(c) - 5]	\$175,314
b. 1 Year NC	<u>13,075</u>
c. UAL as of July 1, 2019 [6(a) + (6b)] x (1.065)	\$200,635
7. Unfunded Actuarial Liability Amortization¹⁾	\$22,607
8. Projected Payroll as of July 1, 2019	\$946,936
9. Fiscal Years Ending 2020/2021 Contribution Percentage	
a. Normal Cost [4(b) / 8]	1.42%
b. Unfunded Actuarial Liability Amortization [7/8]	<u>2.39%</u>
c. Total	3.81%

1) Based on a 20-year amortization period from July 1, 2012 (13 years remaining as of 7/1/19). Payments are assumed to be made throughout the year.

Exhibit 2

Summary of Participant Data

Valuation Results as of July 1, 2018	
1. Active Participants	
a. Count	10
b. Average Age	58.0
c. Average Service (Years)	20.5
d. Valuation Pay	\$921,592
2. Retired Participants	
a. Count	3
b. Average Retiree Age	65.3
c. Average Annual Retiree Benefit	\$6,738
d. Average Monthly Retiree Benefit	\$562

Exhibit 3

Summary of Active Participants by Age and Service

The number of active participants, summarized by attained age and years of City service as of July 1, 2018, is shown below.

Age	Years of City Service										Total	
	< 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+		
0-34	0	0	0	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	1	0	0	0	0	0	0	1
45-49	0	0	0	0	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	1	1	0	0	0	2
55-59	0	0	0	0	2	0	0	0	0	0	0	2
60-64	0	0	0	0	2	0	1	0	0	0	0	2
65-69	0	0	0	0	2	0	0	0	0	0	0	2
70 +	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	7	0	2	1	0	0	0	10

Exhibit 4**Summary of Inactive Participants by Age**

The number of retirees, surviving spouses, and dependent spouses are shown below. The counts are summarized by attained age as of July 1, 2018.

Age	Retirees & Surviving Spouses	Dependent Spouses
Under 55	0	0
55 – 59	1	1
60 – 64	1	0
65 – 69	0	0
70 – 74	0	0
75 – 79	1	0
80 & Over	<u>0</u>	<u>0</u>
Total	3	1

Exhibit 5

Change in Participant Counts

The change in participant counts from July 1, 2015 to July 1, 2018 is shown below.

	Active	Retirees and Beneficiaries	Total
As of July 1, 2015	13	1	14
New Entrants	0	0	0
Terminated without a benefit	(1)	0	(1)
Retired	(2)	2	0
Deceased	0	0	0
New Beneficiary	0	0	0
Net data adjustments	<u>0</u>	<u>0</u>	<u>0</u>
As of July 1, 2018	10	3	13

Exhibit 6

Reconciliation of Market Value of Assets

A reconciliation of the change in market value of assets from July 1, 2015 to July 1, 2018 is shown below.

1. Market Value of Assets as of July 1, 2015	\$467,468
2. Income	
a. Employer Contributions July 1, 2015 – June 30, 2016	\$37,621
b. Employer Contributions July 1, 2016 – June 30, 2017	35,733
c. Employer Contributions July 1, 2017 – June 30, 2018	30,305
d. Investment Earnings	<u>102,591</u>
e. Total	\$206,250
3. Disbursements	
a. Benefit Payments	\$29,933
b. Administrative Expenses	<u>8,244</u>
c. Total	\$38,177
4. Net Increase or (Decrease), [2(e) – 3(c)]	168,073
5. Market Value of Assets as of July 1, 2018, [1 + 4]	\$635,541
6. Average Annual Gross Rate of Return for the Period	6.42%
7. Average Annual Rate of Return - Net of Expenses	5.88%

Exhibit 7

Determination of Actuarial (Gain)/Loss

Based on an investment return assumption of 7.00%. The liability gain or loss is a measure of the difference between assumed events and actual events. It includes the difference between assumed and actual retirements, terminations, deaths, and other events. It also includes changes in benefits and actuarial methods and assumptions.

1. Unfunded Actuarial Liability as of July 1, 2015	\$135,002
2. Gross Normal Cost as of July 1, 2015	\$21,573
3. Receipts July 1, 2015 – June 30, 2016	
a. Employee Contributions	\$0
b. Employer Contributions	37,621
c. Interest Earnings	<u>1,317</u>
d. Total	\$38,938
4. Expected Unfunded Actuarial Liability as of July 1, 2016 [1 + 2] x 1.07 – 3(d)	\$128,597
5. Gross Normal Cost as of July 1, 2016	\$22,220
6. Receipts July 1, 2016 – June 30, 2017	
a. Employee Contributions	\$0
b. Employer Contributions	35,733
c. Interest Earnings	<u>1,251</u>
d. Total	\$36,984
7. Expected Unfunded Actuarial Liability as of July 1, 2017 [4 + 5] x 1.07 – 6(d)	\$124,390
8. Gross Normal Cost as of July 1, 2017	\$22,887
9. Receipts July 1, 2017 – June 30, 2018	
a. Employee Contributions	\$0
b. Employer Contributions	30,305
c. Interest Earnings	<u>1,061</u>
d. Total	\$31,366
10. Expected Unfunded Actuarial Liability as of July 1, 2018 [7 + 8] x 1.07 – 9(d)	\$126,220
11. Actuarial (Gain)/Loss	
a. Demographic Experience	(13,621)
b. Demographic Assumption Changes	(7,796)
c. Investment Rate of Return Assumption Change	49,912
d. Plan Investment Experience	<u>20,599</u>
e. Total	\$49,094
12. Total New Unfunded Actuarial Liability as of July 1, 2018 [10 + 11(e)]	\$175,314

Exhibit 8

Schedule of Funding Progress

<u>Valuation Date</u>	<u>Actuarial Liability¹⁾</u>	<u>Value of Assets</u>	<u>Unfunded Liability</u>	<u>Funded Ratio</u>	<u>Valuation Payroll</u>	<u>UAL as a % of Payroll</u>
07/01/2006	\$162,963	\$0	\$162,963	0.00%	\$1,440,139	11.32%
07/01/2008	\$242,201	\$62,173	\$180,028	25.67%	\$1,633,481	11.02%
07/01/2011	\$464,143	\$199,266	\$264,877	42.93%	\$1,729,871	15.31%
07/01/2013	\$513,370	\$326,423	\$186,947	63.58%	\$1,515,069	12.34%
07/01/2015	\$602,469	\$467,468	\$135,001	77.59%	\$1,275,219	10.59%
07/01/2018	\$810,855	\$635,541	\$175,314	78.38%	\$921,592	19.02%

1) based on a 7.0% investment rate of return assumption through 7/1/2015 and 6.50% thereafter.

Exhibit 9**Ten-Year Projection of Benefit Payments**

Plan Year Beginning July 1	Total
2018	\$21,843
2019	26,114
2020	30,575
2021	35,719
2022	41,650
2023	46,921
2024	54,083
2025	57,835
2026	61,369
2027	64,280

Summary of Benefit Provisions

A. Plan Eligibility

Tier I –Miscellaneous Non-Safety employees hired before January 1, 2013.

Tier II – Safety employees hired before January 1, 2013.

Tier III – Employees designated by the Plan Administrator as eligible and set forth in Schedule A.

No new entrants are permitted in the plan on or after January 1, 2013.

B. Benefit Service

Benefit service is continuous service from last date of hire with the City for Tiers I and II. Benefit service for Tier III includes all service with the City and does not have to be continuous.

C. Vesting Service

Vesting service is continuous service from last date of hire with the City for Tiers I and II. Vesting service for Tier III includes all service with the City and does not have to be continuous.

D. Employee Contributions

None.

E. Final Average Compensation

Final Average Compensation is equal to the highest twelve consecutive months of compensation, subject to IRC 401(a)(17) limitations.

F. Supplemental Benefit

A Tier I employee retiring from active service on or after age 55 and 15 years of service or a Tier III employee retiring (and not prior to December 30, 2007) from active service on or after age 55 and 13 years of service is eligible for a lifetime supplemental benefit from the Retirement Enhancement Plan. The annual benefit is the product of the following three items:

- i. Benefit Service
- ii. Final Average Compensation
- iii. The following CalPERS "2.5% at 55" plan factors:

<u>Age</u>	<u>Factor</u>
55+	2.500%

Less the CalPERS "2% at 55" service retirement benefit, calculated as the product of the following three items:

- i. Benefit Service
- ii. Final Average Compensation
- iii. The following CalPERS "2.0% at 55 for Local Miscellaneous Members" factors:

<u>Age</u>	<u>Factor</u>	<u>Age</u>	<u>Factor</u>
55	2.000%	60	2.262%
56	2.052%	61	2.314%
57	2.104%	62	2.366%
58	2.156%	63	2.418%
59	2.210%	64+	2.418%

A Tier II employee retiring from active service on or after age 55 and 15 years of service is eligible for a lifetime supplemental benefit from the Retirement Enhancement Plan. The annual benefit is the product of the following three items:

- i. Benefit Service
- ii. Final Average Compensation
- iii. The following CalPERS "3% at 55" plan factors:

<u>Age</u>	<u>Factor</u>
55+	3.000%

Less the CalPERS "2% at 55" service retirement benefit, calculated as the product of the following three items:

- i. Benefit Service
- ii. Final Average Compensation
- iii. The following CalPERS "2.0% at 50" factors:

<u>Age</u>	<u>Factor</u>
55+	2.700%

G. Disability Benefit

There is no disability benefit under this plan.

H. Death Benefit

There is no death benefit under this plan.

I. Withdrawal Benefit

There is no withdrawal benefit under this plan for terminating before retirement eligibility.

J. Normal Form of Payment

The normal form of benefit is a life-only annuity.

K. Optional Forms of Payment

In lieu of a life-only annuity, a participant may elect an actuarial equivalent optional form of payment. The optional form is a joint and survivor annuity.

L. Post-Retirement Pension Increases

Any benefit in payment status will increase by 2.00% per annum on each participant's anniversary date of retirement.

Plan Provision Changes Since the Prior Valuation

None.

Summary of Actuarial Assumptions and Methods

The following actuarial assumptions were used to determine the value of future benefits payable under the Plan. The assumptions are based on the recent experience study conducted for CalPERS based on data from 1997-2015 and released in November 2017.

A. Valuation Date

July 1, 2018

B. Investment Rate of Return

6.50%

C. Inflation Rate

2.50%

D. Payroll Growth

2.75%

E. Cost of Living Adjustment

2.00% compounded annually.

F. Salary Increases

The assumed salary increases (merit plus inflation) are consistent with the rates used to value Miscellaneous Public Agency CalPERS Pension Plans for an employee with an entry age of 30. Sample rates are as follows:

Years of Service	Annual Increase
0	10.50%
1	9.10%
2	7.85%
3	7.00%
4	6.30%
5	5.70%
10	4.10%
15	3.75%
22 or more	3.40%

G. Pre-Retirement Mortality

The assumed pre-retirement mortality rates are consistent with the Non-Industrial rates used to value Miscellaneous Public Agency CalPERS Pension Plans. Sample rates are as follows:

Age	Pre-Retirement Mortality Rates	
	Male	Female
25	0.0289%	0.0109%
30	0.0379%	0.0155%
35	0.0491%	0.0270%
40	0.0637%	0.0366%
45	0.0795%	0.0543%
50	0.1161%	0.0794%
55	0.1717%	0.1204%
60	0.2550%	0.1657%
65	0.3626%	0.2329%
70	0.6227%	0.3883%
75	1.0572%	0.6228%

H. Post-Retirement Mortality

The assumed post-retirement mortality rates are consistent with the Non-Industrial rates used to value Miscellaneous Public Agency CalPERS Pension Plans. Sample rates are as follows:

Age	Post-Retirement Mortality Rates	
	Male	Female
55	0.4369%	0.4097%
60	0.6712%	0.4763%
65	0.9275%	0.6372%
70	1.3389%	0.9262%
75	2.3161%	1.6348%
80	3.9774%	3.0072%
90	13.0438%	10.0892%
100	32.2218%	28.1511%
110	100.0000%	100.0000%

I. Retirement Rates

Tier I: Based on Service Retirement Rates for Public Agency Miscellaneous (“2.5% at 55”) plans for retirees with 20 years of service:

Age	Rate
55	7.30%
56	9.10%
57	8.30%
58	9.30%
59	9.20%
60	13.00%
61	13.30%
62	16.80%
63	19.20%
64	17.50%
65	22.90%
66-67	25.20%
68-74	22.90%
75+	100.00%

Tier II: Based on Service Retirement Rates for Public Agency Police (“3.0% at 50”) plans for retirees with 25 years of service:

Age	Rate
55	17.50%
56	16.50%
57	16.50%
58	18.50%
59	18.50%
60	18.50%
61	16.00%
62	20.00%
63	20.00%
64	17.50%
65+	100.00%

J. Withdrawal Rates

Consistent with the rates used to value CalPERS Miscellaneous Public Agency Pension Plans. Sample rates are as follows:

Service Years	Hire Age		
	30	40	50
Under 1	16.06%	14.68%	13.32%
1 to 2	14.09%	12.71%	11.35%
2 to 3	12.12%	10.74%	9.38%
3 to 4	10.15%	8.77%	7.41%
4 to 5	8.18%	6.80%	5.43%
10 to 11	3.75%	2.86%	1.97%
15 to 16	2.16%	1.43%	0.47%
20 to 21	1.30%	0.52%	0.08%
25 to 26	0.53%	0.08%	0.01%

After 35 years of service a 0.01% rate of termination is assumed.

K. Disability

The assumed disability rates are consistent with the rates used to value CalPERS Miscellaneous Public Agency Pension Plans. Sample rates are as follows:

Age	Male	Female
30	0.019%	0.024%
35	0.039%	0.071%
40	0.102%	0.135%
45	0.151%	0.188%
50	0.158%	0.199%
55	0.158%	0.149%
60	0.153%	0.105%
65	0.128%	0.088%
70	0.102%	0.084%
75	0.102%	0.088%

L. Maximum Benefits and Salary

Salary used in the calculation of final average compensation is subject to the limitations of IRC 401(a)(17). The limit is assumed to increase 2.75% per annum.

M. Expenses

None are assumed.

N. Form of Payment

All current participants are assumed to elect a single life annuity.

O. Entry Age

Age at hire with the City.

Actuarial Cost Method

The cost method for valuation of liabilities used for this valuation is the entry age normal method. This is one of a family of valuation methods known as projected benefits methods. The chief characteristic of projected benefits methods is that the actuarial present value of all plan benefits is determined as of the valuation date and then allocated between the period before and after the valuation date. The present value of plan benefits earned prior to the valuation date is called the actuarial liability. The present value of plan benefits to be earned after the valuation date is called the present value of future normal costs.

Under the entry age normal actuarial cost method, an individual entry age normal cost ratio is determined for each participant by taking the value, as of his entry age in the plan, of the participant's projected future benefits (assuming the current plan benefit provisions had always been in existence), and dividing it by the value, as of the participant's entry age, of his expected future salary. This ratio for each participant is then multiplied by the present value, as of the valuation date, of the participant's future salary. The sum of these values for all active participants is the plan's present value (as of the valuation date) of future normal costs. The excess of the present value of all plan benefits over the present value of future normal costs is the actuarial liability. The difference between the actuarial liability and the value of the plan assets as of the valuation date is the unfunded actuarial liability.

Asset Valuation Method

The actuarial value of assets is equal to the market value of assets as provided by Public Agency Retirement Services.

Changes in Actuarial Assumptions and Methods since Prior Valuation

Below we describe changes made to the actuarial assumptions and methods since the July 1, 2015 valuation.

- The investment return assumption was lowered from 7.00% to 6.50% in conjunction with CalPERS' decision to lower its investment return rate from 7.50% to 7.00% over a period of years.
- The pre- and post-retirement mortality, salary increase, withdrawal and disability assumptions were updated to be consistent with those recommended for CalPERS actuarial valuations of miscellaneous public agency pension plans. For Tiers I and III, the retirement assumptions were updated to be consistent with those recommended for CalPERS actuarial valuations of miscellaneous public agency "2.5% at 55" pension plans for retirements at 20 years of service. For Tier II, the retirement assumptions were updated to be consistent with those recommended for CalPERS actuarial valuations of safety police "3.0% at 50" pension plans for retirements at 25 years of service. These new demographic assumptions are described in the November 2017 experience study of the California Public Employees Retirement System. This study used data from 1997 to 2015.
- The assumption for inflation was lowered from 2.75% to 2.5% and the assumption for payroll growth was lowered from 3.0% to 2.75% as prescribed by CalPERS for valuations of its miscellaneous public agency pension plans.