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# City of Roseville Employees Retirement System

General Employees

June 30, 2021 | Actuarial Valuation Report

Nyhart Actuary & Employee Benefits

**Table of Contents**

<b>Actuarial Certification</b>	<b>2</b>
<b>Executive Summary</b>	<b>4</b>
Summary Results	4
Changes Since Prior Valuation and Key Notes	5
Identification of Risks	6
Plan Maturity Measures	7
<b>Assets and Liabilities</b>	<b>8</b>
Present Value of Future Benefits	8
Accrued Liabilities	9
Asset Information	10
Reconciliation of Gain/Loss	12
<b>Contribution Requirements</b>	<b>13</b>
Development of Recommended Contribution	13
<b>Michigan PA 202 Reporting Requirements</b>	<b>14</b>
<b>Demographic Information</b>	<b>15</b>
<b>Participant Reconciliation</b>	<b>17</b>
<b>Plan Provisions</b>	<b>19</b>
<b>Actuarial Assumptions</b>	<b>25</b>
<b>Other Measurements: Supplemental Information for Housing Employees</b>	<b>30</b>

**Actuarial Certification**

At the request of the plan sponsor, this report summarizes City of Roseville Employees Retirement System (General Employees) as of June 30, 2021. The purpose of this report is to communicate the following results of the valuation:

- Determine Funded Status; and
- Determine Recommended Contribution for the fiscal year July 1, 2022 through June 30, 2023.

This report has been prepared in accordance with the applicable Federal and State laws. Consequently, it may not be appropriate for other purposes. Please contact Nyhart prior to disclosing this report to any other party or relying on its content for any purpose other than that explained above. Failure to do so may result in misrepresentation or misinterpretation of this report.

The results in this report were prepared using information provided to us by other parties. The census information has been provided to us by the employer. Asset information has been provided to us by the trustee. We have reviewed the provided data for reasonableness when compared to prior information provided, but have not audited the data. Where relevant data may be missing, we have made assumptions we believe to be reasonable. We are not aware of any significant issues with and have relied on the data provided. Any errors in the data provided may result in a different result than those provided in this report. A summary of the data used in the valuation is included in this report.

The actuarial assumptions and methods were chosen by the Board. In our opinion, all actuarial assumptions and methods are individually reasonable and in combination represent our best estimate of anticipated experience of the plan. 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); and
- changes in plan provisions or applicable law.

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement. This report has been prepared in accordance with generally accepted actuarial principles and practice.

This actuarial valuation and/or cost determination was prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable.

**Actuarial Certification**

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In preparing these results, Nyhart used ProVal valuation software designed by Winklevoss Technologies, LLC. This software is widely used for the purpose of performing pension valuations. We coded the plan provisions, assumptions, methods, and participant data summarized in this report, and reviewed the liability and cost outputs for reasonableness. We are not aware of any weaknesses or limitations in the software, and have determined it is appropriate for performing this valuation.

Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report. To the extent that this report or any attachment concerns tax matters, it is not intended to be used and cannot be used by a taxpayer for the purpose of avoiding penalties that may be imposed by law.

The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States and are available for any questions.

Nyhart



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Nick Meggos, EA, FCA  
Enrolled Actuary No. 20-7406



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Enrolled Actuary No. 20-8260

January 7, 2022  
Date

**Executive Summary**

**Summary Results**

The actuarial valuation's primary purpose is to produce a scorecard measure displaying the funding progress of the plan toward the ultimate goal of paying benefits at retirement. The accrued liability is based on an entry age level percentage of pay.

	June 30, 2020	June 30, 2021
<b>Funded Status Measures</b>		
Accrued Liability	\$78,432,623	\$80,796,685
Actuarial Value of Assets	\$53,370,633	\$56,832,262
Unfunded Accrued Liability	\$25,061,990	\$23,964,423
Funded Percentage (AVA)	68.0%	70.3%
Funded percentage (MVA)	66.0%	83.0%
Interest Rate	7.50%	7.00%
<b>Cost Measures</b>		
Recommended Total Contribution	\$2,222,235	\$1,781,384
Recommended Contribution (as a percentage of payroll)	33.3%	27.4%
<b>Asset Performance</b>		
Market Value of Assets	\$51,768,841	\$67,093,519
Actuarial Value of Assets	\$53,370,633	\$56,832,262
Actuarial Value/Market Value	103.1%	84.7%
<b>Member Information</b>		
Active Members	118	116
Terminated Vested Members	5	10
Retirees, Beneficiaries, and Disabled Members	205	202
Total	328	328
Covered Payroll	\$6,666,912	\$6,500,416

### **Changes Since Prior Valuation and Key Notes**

The report reflects the assumption changes recommended in the July 1, 2021 Experience Study Report, including the following:

- The interest rate was lowered from 7.50% to 7.00% to reflect future capital market assumptions and the expected return on assets. This change resulted in an increase in accrued liability.
- The withdrawal rates and retirement rates were changed to reflect future anticipated experience.
- The salary scale was lowered to reflect lower pay expectations for future years.

The administrative expense load was increased from \$85,000 to \$120,000 based on the prior year's actual administrative expenses paid.

**Identification of Risks**

The results presented in this report are shown as single point values. However, these values are derived using assumptions about future markets and demographic behavior. If actual experience deviates from our assumptions, the actual results for the plan will consequently deviate from those presented in this report. Therefore, it is critical to understand the risks facing this pension plan. The following table shows the risks we believe are most relevant to the City of Roseville Employees Retirement System. The risks are generally ordered with those we believe to have the most significance at the top. Also shown are possible methods by which a more detailed assessment of the risk can be performed.

<b>Type of Risk</b>	<b>Method to Assess Risk</b>
Investment Return	Scenario Testing; Asset Liability Study
Demographic Risk	Scenario Testing; Stress Testing; Experience Study
Participant Longevity	Stress Testing; Experience Study
Salary Growth	Scenario Testing; Experience Study; Review Future Budgets

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## **Plan Maturity Measures – June 30, 2021**

Each pension plan has a distinct life-cycle. New plans promise future benefits to active employees and then accumulate assets to pre-fund those benefits. As the plan matures, benefits are paid and the pre-funded assets begin to decumulate until ultimately, the plan pays out all benefits. A plan's maturity has a dramatic influence on how risks should be viewed. The following maturity measures illustrate where the City of Roseville Employees Retirement System falls in its life-cycle.

### **Duration of Liabilities: 10.1%**

Duration is the most common measure of plan maturity. It is defined as the sensitivity of the liabilities to a change in the interest rate assumption. The metric also approximates the weighted average length of time, in years, until benefits are expected to be paid. A plan with high duration is, by definition, more sensitive to changes in interest rates. A plan with low duration is more susceptible to risk if asset performance deviates from expectations as there would be less time to make up for market losses in adverse market environments while more favorable environments could result in trapped surplus from gains. Conversely, high duration plans can often take on more risk when investing, and low duration plans are less sensitive to interest rate fluctuations.

### **Demographic Distribution - Ratio of Actively Accruing Participants to All Participants: 35.4%**

A plan with a high ratio is more sensitive to fluctuations in salary (if a salary-based plan) and statutory changes. A plan with a low ratio is at higher risk from demographic experience. Such a plan should pay close attention to valuation assumptions as there will be less opportunity to realize future offsetting gains or losses when current experience deviates from assumptions. Plans with a low ratio also have limited opportunities to make alterations to plan design to affect future funded status.

### **Asset Leverage - Ratio of Payroll for Plan Participants to Market Value of Assets: 9.7%**

Younger plans typically have a large payroll base from which to draw in order to fund the plan while mature plans often have a large pool of assets dedicated to providing benefits to a population primarily consisting of members no longer on payroll. Plans with low asset leverage will find it more difficult to address underfunding, as the contributions needed to make up the deficit will represent a higher percentage of payroll than for a plan with high asset leverage.

### **Benefit Payment Percentage - Ratio of Annual Benefit Payments to Market Value of Assets: 9.3%**

As a plan enters its decumulation phase, a larger percentage of the pre-funded assets are paid out each year to retirees. A high percentage is not cause for alarm as long as the plan is nearly fully funded. However, such a plan is more sensitive to negative asset performance, especially if cash contributions are not an option to make up for losses.



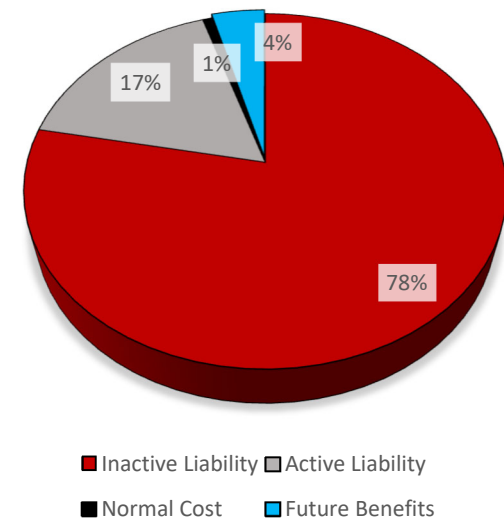
**Assets and Liabilities**

**Present Value of Future Benefits**

The Present Value of Future Benefits represents the discounted value of all future benefits expected to be payable to current members, considering future service and compensation not yet earned.

	<b>June 30, 2021</b>
<b>Present Value of Future Benefits</b>	
Active members	
Retirement	\$15,761,042
Disability	662,983
Death	211,978
Termination	1,497,979
Refund of Employee Contributions	454,403
Total active	<u>\$18,588,385</u>
Inactive members	
Retired and Disabled members	\$61,868,265
Beneficiaries	3,377,381
Terminated vested members	1,136,122
Total inactive	<u>\$66,381,768</u>
<b>Total</b>	<b>\$84,970,153</b>
<b>Present Value of Future Payrolls</b>	<b>\$42,855,969</b>
<b>Present Value of Future Employee Contributions</b>	<b>\$3,594,552</b>

**Breakdown of Present Value of Future Benefits**



**Assets and Liabilities**

**Accrued Liability**

The Accrued Liability measures the present value of benefits earned as of the valuation date, using a specified set of actuarial assumptions. It is not a long-term snapshot of the liabilities.

	<b>June 30, 2021</b>
<b>Accrued Liabilities</b>	
Active members	
Retirement	\$13,161,925
Disability	472,990
Death	151,973
Termination	628,029
Total Active	<u>\$14,414,917</u>
Inactive members	
Retired and Disabled members	\$61,868,265
Beneficiaries	3,377,381
Terminated vested members	<u>1,136,122</u>
Total Inactive	\$66,381,768
 Total	 \$80,796,685
 Total Normal Cost	 \$640,494

**Assets and Liabilities**

**Asset Information**

The amount of assets backing the pension promise is the most significant driver of volatility and future costs within a pension plan. The investment performance of the assets directly offsets the ultimate cost.

	<b>Market Value</b>
	<b>June 30, 2021</b>
<b>Asset Value Reconciliation</b>	
Value of assets, beginning of year	\$51,768,841
Contributions	
Employer	\$2,260,051
Employee	501,568
Total	\$2,761,619
Investment income, net expenses	\$ 18,887,447
Benefit payments and refunds	(6,208,535)
Administrative expenses	(115,853)
Value of assets, end of year	\$67,093,519
Return on Market Value	37.8%
<b>Actuarial Value of Plan Assets</b>	
Actuarial value, end of year	\$56,832,262

\$81,923,755 was transferred from the City of Roseville Employees Retirement System to the Police and Fire Plan shortly after July 1, 2020. The Beginning of Year Value of Assets shown above reflects the market value utilized in the June 30, 2020 General Employees Actuarial Valuation Report.

**Assets and Liabilities**

**Asset Information (continued)**

Plan Assets are used to develop funded percentages and contribution requirements.

	<b>June 30, 2021</b>
1. Actuarial value of assets, beginning of year	\$53,370,633
2. Market value of assets, beginning of year	\$51,768,841
3. Contributions	\$2,761,619
4. Admin Expenses	(115,853)
5. Benefit Payments and Refunds	(6,208,535)
6. Expected Total Investment Income	3,869,194
7. Market Value of Assets, end of year	67,093,519
8. Investment Income, net expenses	18,887,447
9. Amount of Phased-In Recognition (8-6)	15,018,253
10. Investment Gain/Loss	
a. From current year (9*.25)	3,754,563
b. From 1 year prior	(352,655)
c. From 2 years prior	(309,480)
d. From 3 years prior	62,776
e. Total	3,155,204
11. Preliminary Actuarial value of assets, end of year (1 + 3 + 4 + 5 +6 +10e)	\$56,832,262
12. 80% of Market value of assets	\$53,674,815
13. 120% of Market value of assets	\$80,512,223
14. Final Actuarial value of assets	\$56,832,262
15. Return on Actuarial Value	13.6%

**Assets and Liabilities**

**Reconciliation of Gain/Loss**

	<b>June 30, 2021</b>
<b>Liability (gain)/loss</b>	
Actuarial liability (06/30/2020)	\$78,432,623
Normal cost	1,015,035
Benefit payments	(6,208,535)
Expected Interest	5,729,963
Assumption changes	2,130,148
Plan provision changes	0
Expected actuarial liability (06/30/2021)	\$81,099,234
Actual actuarial liability (06/30/2021)	\$80,796,685
Liability (gain)/loss	(\$302,549)
<b>Asset (gain)/loss</b>	
Actuarial value of assets (06/30/2020)	\$53,370,633
Contributions	2,761,619
Benefit payments and expenses	(6,324,388)
Expected Investment return	3,869,194
Change in actuarial value of assets method	0
Expected actuarial value of assets (06/30/2021)	\$53,677,058
Actual actuarial value of assets (06/30/2021)	\$56,832,262
Asset (gain)/loss	(\$3,155,204)
<b>Total (gain)/loss</b>	<b>(\$3,457,753)</b>

**Contribution Requirements**

**Development of Recommended Contribution**

The minimum recommended contribution is the annual amount necessary to fund the plan according to funding policies and/or applicable laws. The recommended contribution is composed of the normal cost, administrative expenses, plus an amortization charge.

**June 30, 2021**

**Funded Position**

1. Entry age accrued liability	\$80,796,685
2. Actuarial value of assets	56,832,262
3. Unfunded actuarial accrued liability (UAAL)	\$23,964,423
4. Expected Contribution Discounted to June 30, 2021	2,184,963
5. Unfunded actuarial accrued liability to amortize	\$21,779,460

**Employer Contributions**

1. Normal Cost	
(a) Total normal cost	\$640,494
(b) Expected participant contributions	518,495
(c) Net normal cost	\$121,999
2. Administrative expenses	120,000
3. Amortization of UAAL	1,394,922
4. Interest	144,463
5. Total recommended contribution for July 2022- June 2023	\$1,781,384
6. Expected covered payroll	\$6,500,416
As a percentage of covered payroll	27.4%
7. Total Normal Cost as a Percentage of Covered Payroll	9.9%

**Funding Results**

**Michigan PA 202 Reporting Requirements**

Under Michigan PA 202 Reporting, the Funded Ratio and Actuarial Determined Contribution must also be reported under State Treasury Uniform Assumptions as shown.

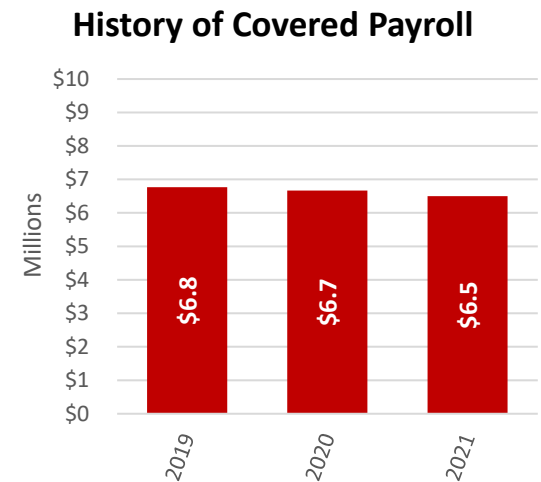
	<b>June 30, 2021</b>	
	<b>Plan Assumptions</b>	<b>State Treasury Uniform Assumptions</b>
<b>Funded Ratio</b>		
<i>Interest Rate</i>	7.00%	7.00%
<i>Mortality</i>	<i>PubG-2010 with Scale MP 2020</i>	<i>PubG-2010 with Scale MP 2019</i>
Accrued Liability	\$80,432,764	\$80,759,889
Market Value of Assets	\$67,093,519	\$67,093,519
Unfunded Accrued Liability, MVA Basis	\$13,339,245	\$13,666,370
<b>Funded Percentage (MVA)</b>	<b>83.42%</b>	<b>83.08%</b>
<b>Actuarial Determined Contribution</b>		
<i>Interest Rate</i>	7.50%	7.00%
<i>Mortality</i>	<i>PubG-2010 with Scale MP-2020</i>	<i>PubG-2010 with Scale MP 2019</i>
Actuarially Determined Contribution July 1, 2021 – June 30, 2022	\$2,222,235	\$2,533,644

**Demographic Information**

**Demographic Information**

The foundation of a reliable actuarial report is the participant information provided by the plan sponsor. Monitoring trends in demographic information is crucial for long-term pension planning.

	June 30, 2020	June 30, 2021
<b>Participant Counts</b>		
Active Participants	118	116
Retired Participants	171	168
Disabled Participants	2	2
Beneficiaries	32	32
Terminated Vested Participants	5	10
Total Participants	328	328
<b>Active Participant Demographics</b>		
Average Age	48.3	48.4
Average Service	9.9	9.7
Average Compensation	\$56,499	\$56,038
Covered Payroll	\$6,666,912	\$6,500,416





**Demographic Information**

**Demographic Information (continued)**

	<b>June 30, 2020</b>	<b>June 30, 2021</b>
<b>Retiree Statistics</b>		
Count	171	168
Average Age	69.6	69.7
Average Monthly Benefit	\$2,752	\$2,798
<b>Disabled Participant Statistics</b>		
Count	2	2
Average Age	73.3	74.3
Average Monthly Benefit	\$417	\$417
<b>Beneficiary Statistics</b>		
Count	32	32
Average Age	76.7	76.5
Average Monthly Benefit	\$1,145	\$1,101
<b>Terminated Vested Participant Statistics</b>		
Count	5	10
Average Age	44.9	48.1
Average Monthly Benefit	\$1,061	\$893

Monitoring the average age of the population is important due to the relationship of actuarial cost to age. Generally speaking, an older population generates a higher actuarial cost.

Changes in the ratio of active to retired participants can be a significant driver of costs in a volatile asset market.

**Participant Reconciliation**

**Participant Reconciliation**

	<b>Active</b>	<b>Terminated Vested</b>	<b>Retired</b>	<b>Disabled</b>	<b>Beneficiaries</b>	<b>Totals</b>
<b>Prior Year</b>	118	5	171	2	32	328
<b>Active</b>						
To Terminated Vested	(5)	5				0
To Retired	(4)		4			0
To Lump Sum Cash-Out	(6)					(6)
<b>Terminated Vested</b>						
To Lump Sum Cash-Out		(1)				(1)
<b>Retired</b>						
To Active						
To Terminated Vested						
To Death			(7)			(7)
<b>Survivor</b>						
To Death					(2)	(2)
<b>Additions</b>	13	1			2	16
<b>Departures</b>						
<b>Current Year</b>	116	10	168	2	32	328

**Participant Reconciliation**

**Active Participant Schedule**

Active participant information grouped based on age and service.

Age Group	Years of Service										Total	Average Pay
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up		
Under 25	2	3									5	\$43,299
25 to 29	1	8	2								11	\$51,586
30 to 34		3	2								5	\$50,992
35 to 39	1	5	2		1						9	\$58,178
40 to 44	3	5	4	1	1						14	\$63,026
45 to 49	1	3	2		1	2					9	\$56,772
50 to 54	2	4	4	2	5	5	3	1			26	\$64,426
55 to 59	3	3	2	1	5	5	1				20	\$57,824
60 to 64			4	3	1						8	\$46,209
65 to 69		1	2	2		1					6	\$51,393
70 & up			1	1	1						3	\$11,675
<b>Total</b>	<b>13</b>	<b>35</b>	<b>25</b>	<b>10</b>	<b>15</b>	<b>13</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>116</b>	<b>\$56,038</b>

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<b>Plan Status</b>	The plan provides ongoing benefit accruals and participation is open to new entrants
<b>Accrual of Benefits</b>	A participant shall accumulate a benefit payable at normal retirement date based upon compensation and credited service earned as of the date of determination.
<b>Benefits</b>	
<b>Normal Retirement</b>	
Eligibility	General and Supervisors: Any age with 30 or more years of credited service, age 55 with 20 or more years of credited service, or age 60 with 10 or more years of credited service.
Benefit	<p>The benefit amounts attributable to service retirements and the conditions under which such benefits may be paid are described <i>Plan Provision by Group</i> table.</p> <p>Benefit formula is the following: <math>FAC \times \text{Years of Credited Service} \times \text{Multiplier}</math>, with a maximum allowable benefit of <math>\text{Maximum Multiplier} \times FAC</math></p>
<b>Deferred Retirement Option Program (DROP)</b>	
Eligibility	Supervisors: Age 55 with 25 years of service or with 30 years of service regardless of age. Clerical: Age 50 with 25 years of service or with 30 years of service regardless of age
Conditions	See the <i>Plan Provisions by Group</i> table for details

**Plan Provisions**

**Deferred Retirement (Vested Benefit)**

Eligibility	Termination of City employment with 10 or more years of credited service.
Benefit	General: Accrued regular retirement amount payable beginning at age 55 with 20 years of service or age 60 with 10 years of service

**Duty Disability Retirement**

Eligibility	Total and permanent disability incurred in line of duty with the City for which Worker's Compensation is paid.
Benefit	General and Supervisors: Accrued regular retirement amount; minimum to age 55, 15% of FAC; minimum at age 55, sum of 10% of first \$4,200 of FAC, plus 15% of FAC in excess of \$4,200. For all members, upon termination of Worker's Compensation period, or attainment of age 65, if earlier, service credit increased to include years in receipt of Worker's Compensation. Minimum - 50% of FAC.

**Non-Duty Disability**

Eligibility	Total and permanent disability after 10 years of credited service.
Benefit	General and Supervisors: Accrued regular retirement amount, minimum 15% of FAC.

**Duty Death in Service**

Eligibility	Death incurred in line of duty with the City, or death of disability retiree as a result of same injury or disease for which he was retired; Worker's Compensation is being paid as a result of the death.
Benefit	Termination of Worker's Compensation period, an amount equal to Worker's Compensation payments are continued to unmarried spouse, unmarried children under age 18, and parents who were in receipt of Worker's Compensation as a result of the death.

**Plan Provisions**

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**Non-Duty Death in Service**

Eligibility	Any age with 10 or more years of credited service.
Benefit	100% survivor actuarial equivalent of accrued regular retirement amount to elected beneficiary

**Post-Retirement Increase**

Eligibility	General members with effective dates of retirement on or after January 1, 1993.
Benefit	See <i>Plan Provisions by Group</i> for details

**Plan Provisions**

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**Final Average Compensation**      See the *Plan Provisions by Group* table for details.

**Employee Contributions**      See the *Plan Provision by Group* table for details.

**Plan Provisions Not Included**      We are not aware of any plan provisions not included in the valuation

**Adjustments Made for Subsequent Events**

We are not aware of any event following the measurement date and prior to the date of this report that would materially impact the results of this report

**Plan Provision by Group**

**EMPLOYEES HIRED PRIOR TO JULY 1, 2012**

UNION	RETIREMENT ELIGIBILITY Service/Age	FINAL AVERAGE COMP	BENEFIT MULTIPLIER Service earned prior to 6/30/2012	BENEFIT MULTIPLIER Service earned after 6/30/2012	MAXIMUM MULTIPLIER Hired Prior to 7/1/1994 vs Hired After 7/1/1994	COLA Retired Prior to 7/1/2012 (5/20/2013 for Command)	COLA Retired After 7/1/2012 (5/20/2013 for Command)	MEMBER CONTR RATE	DROP PARTICIPATION	DROP TERMS
CLERICAL	10 / 60; 20 / 55; or 30 / any age	5 highest consecutive years out of last 10	2.50%	2.00%	80% 75%	10% increase years 5 and 10	5% increase years 5, 10, and 15	8.25% / 10.00% DROP	25 Years and age 50 / 30 years and any age	2 Years Max
COURT	10 / 60; 20 / 55; or 30 / any age	Any 3 years out of last 5 years	2.50%	2.00%	80% 75%	10% increase years 5 and 10	5% increase years 5 and 10	9%	N/A	N/A
LOCAL 520	10 / 60; 20 / 55; or 30 / any age	Any 3 years out of last 5 years	2.80%	2.00%	80% 75% Eff 1/1/1995	10% increase years 5 and 10	5% increase years 5, 10, and 15	6.5%	N/A	N/A
SUPERVISORS	10 / 60; 20 / 55; or 30 / any age	Any 3 years out of last 5 years*	2.50%	2.00%	80% 75%	10% increase years 5 and 10	5% increase years 5, 10, and 15	7.0%	25 Years and age 55 / 30 years and any age	7 Years Max



\*\*Year is any 4 consecutive quarters

**Plan Provision by Group**

**EMPLOYEES HIRED ON OR AFTER JULY 1, 2012**

UNION	RETIREMENT ELIGIBILITY Service/Age	FINAL AVERAGE COMP	BENEFIT MULTIPLIER	MAXIMUM MULTIPLIER	COLA	MEMBER CONTR RATE	DROP PARTICIPATION	DROP TERMS
CLERICAL	10 / 60; 20 / 55; or 30 / any age	5 highest consecutive years out of last 10	1.50%	75%	5% increase years 5, 10, and 15	9.5% / 10.0% DROP	25 Years and age 50 / 30 years and any age	2 Years Max
COURT	10 / 60; 20 / 55; or 30 / any age	Any 3 years out of last 5 years	1.50%	70%	5% increase years 5 and 10	9%	N/A	N/A
LOCAL 520	10 / 60; 20 / 55; or 30 / any age	Any 3 years out of last 5 years	1.50%	75%	5% increase years 5, 10, and 15	8%	N/A	N/A
SUPERVISORS	10 / 60; 20 / 55; or 30 / any age	Any 3 years out of last 5 years (Year is any 4 consecutive quarters)	1.50%	75%	5% increase years 5, 10, and 15	8.5%	25 Years and age 55 / 30 years and any age	7 Years Max

**Actuarial Assumptions**

Except where otherwise indicated, the following assumptions were selected by the plan sponsor with the concurrence of the prior actuary. Actuarial Assumptions adopted based on most recent Experience Study, dated July 1, 2021.

**Actuarial Assumptions, Methods and Additional Information for Funding**

<b>Valuation Date</b>	June 30, 2021
<b>Participant Information as of</b>	June 30, 2021
<b>Asset Information as of</b>	June 30, 2021
<b>Cost Method</b>	Entry Age Normal Cost Method
<b>Amortization Method</b>	Level percent of payroll
<b>Remaining Amortization Period</b>	23 years (25-year closed began in 2019)
<b>Payroll Growth Assumptions</b>	3.0%
<b>Asset Valuation Method</b>	4-year adjusted market value
<b>Interest Rates</b>	7.0% (net of investment expenses)
Investment Rate of Return	The interest rate is the long term rate of return on assets. This assumption is supported by the investment mix of the plan assets and long-term capital market return assumptions.
<b>Expense Loading</b>	\$120,000 was added to cover anticipated administrative expenses
<b>Marital Status and Ages</b>	No assumptions
<b>Lump Sum Payments</b>	Lump Sum Payments included in the calculation of average pay upon which benefits are computed were assumed to increase benefits by 10%. Using non-consecutive quarters in FAC was assumed to increase benefits by 1%.

**Actuarial Assumptions**

**Annual Pay Increases**

*The rates of salary increase* used for individual members are in accordance with the following table:

Sample Ages	Years of Service	TOTAL
ALL	0	5.50%
	1	4.50%
	2	3.00%
	3	3.00%
	4	3.00%
20	5 & Over	
25		5.00%
30		4.00%
35		3.00%
40		2.00%
45		2.00%
50		2.00%
55		1.00%
60		1.00%
65		1.00%

**Mortality Rates**

Healthy

PubG-2010 Mortality Table with scale MP-2020

Disabled

PubG-2010 Disabled Mortality with scale MP-2020

**Actuarial Assumptions**

**Retirement Rates**

Retirement rates are based on the last experience study conducted in 2021.  
 Retirement rates are separated by age of participant, as shown below.

<b>Age Retiring</b>	<b>SUPERVISORS</b>	<b>GENERAL</b>
<b>50</b>	30%	20%
<b>51</b>	25%	15%
<b>52</b>	20%	10%
<b>53</b>	20%	10%
<b>54</b>	20%	10%
<b>55</b>	20%	20%
<b>56</b>	20%	20%
<b>57</b>	20%	20%
<b>58</b>	20%	20%
<b>59</b>	20%	20%
<b>60</b>	20%	20%
<b>61</b>	20%	20%
<b>62</b>	40%	20%
<b>63</b>	20%	20%
<b>64</b>	20%	20%
<b>65</b>	100%	100%

**Actuarial Assumptions**

**Disability Rates**

Disability rates vary by age, gender, and division. This assumption measures the probability of members retiring with a disability benefit.

Sample Ages	GENERAL	
	Men	Women
20	0.07%	0.03%
25	0.09%	0.05%
30	0.10%	0.07%
35	0.14%	0.13%
40	0.21%	0.19%
45	0.32%	0.28%
50	0.52%	0.45%
55	0.92%	0.76%

**Withdrawal Rates**

Withdrawal rates vary by service for first 5 years of employment, and vary by age after 5 years.

Sample Ages	Years of Service	GENERAL MEMBERS
ALL	0	10.00%
	1	10.00%
	2	10.00%
	3	10.00%
	4	10.00%
20	5 & Over	10.00%
25		6.00%
30		6.00%
35		5.00%
40		4.00%
45		4.00%
50		4.00%
55		4.00%
60		4.00%
65		4.00%

## Changes Since Prior Report

### Several assumption changes were made following the July 2021 Experience Study

- The interest rate was lowered from 7.50% to 7.00%
- The salary scale was lowered to reflect expected future pay increases
- The retirement rates were adjusted for General (non-supervisor) employees
- The withdrawal rates were changed to reflect future expected experience

**Other Measurements**

**Supplemental Information for Housing Employees as of June 30, 2021**

**Participant Counts**

Active Participants	6
Inactive Participants	4

**Liability Summary**

Present Value of Future Benefits	2,508,552
Actuarial Accrued Liability	2,292,652
Total Normal Cost	31,885
Expected Employee Contributions	<u>(23,333)</u>
Net Normal Cost	8,552