City of Pontiac
General Employees' Retirement System
Annual Actuarial Valuation Report
December 31, 2021

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June 23, 2022

Retirement Board
City of Pontiac General Employees' Retirement System
Pontiac, Michigan

Dear Board Members:

Submitted in this report are the results of the December 31, 2021 actuarial valuation of the liabilities, funded position and contribution requirements associated with benefits provided by the City of Pontiac General Employees' Retirement System (GERS). The purpose of the valuation was to measure the System's funding progress and determine the employer contribution for the 2023-2024 fiscal year. This report should not be relied upon for any other purpose. This report may be provided to parties other than the Retirement Board only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

The valuation was based upon the actuarial assumptions and methods adopted by the Retirement Board, and information furnished by the Retirement System including System benefits, financial transactions, individual members, terminated members, retirees and beneficiaries. Data was checked for internal and year to year consistency, but was not audited by us. As a result, we are unable to assume responsibility for the accuracy or completeness of the data provided.

One of the Board's goals is to reduce the System's investment risk. Based upon the System's asset allocation as of December 31, 2021, no change was made to the current investment return assumption (6.0% net of investment expenses). However, this report also includes a valuation of the System using a 4.5% investment return assumption to illustrate the impact on System liabilities and funding percent of increasing the allocation of System assets to lower risk investments.

Future actuarial measurements may differ significantly from those presented in this report due to such factors as experience differing from that anticipated by actuarial assumptions, changes in plan provisions, actuarial assumptions/methods or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. This valuation assumes the continuing ability of the plan sponsor to make any contributions necessary to fund this plan. A determination of the plan sponsor's ability to make any necessary contributions in the future is beyond the scope of our expertise and was not performed by GRS.

This report was prepared using our proprietary valuation model and related software which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

This report was prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge, this report is complete and accurate and the valuation was conducted in accordance with standards of practice prescribed by the Actuarial Standards Board in compliance with the applicable State statutes. Louise M. Gates and James D. Anderson are independent of the plan sponsor and are Members of the American Academy of Actuaries (MAAA) who meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. It is our opinion that the actuarial assumptions used for the valuation produce results which are reasonable.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

Louise M. Gates, ASA, FCA, MAAA

James D. Anderson, FSA, EA, FCA, MAAA

SECTION A

EXECUTIVE SUMMARY

Executive Summary

1. Computed Employer Contributions – Fiscal Year Beginning July 1, 2023

The computed City contributions are as follows:

Computed Employer Contributions
$0

2. Reasons for Change

There are three general reasons why contributions change from one valuation to the next. The first is a change in the benefits or eligibility conditions of the plan. The second is a change in the valuation assumptions used to predict future occurrences. The third is the difference during the year between the plan's actual experience and what the assumptions predicted.

No benefit changes were reported to the actuary in connection with this valuation of the System. A minor change was made to a liability loading factor (from 6.0% to 5.4%) to reflect a change in potential future stipend benefits and potential future retirees not included in this valuation of the System (Reciprocal Act retirees and those who may be vested due to the plan termination).

3. System Experience

For the year ended December 31, 2021, System experience was overall favorable. The recognized rate of return on System assets during calendar year 2021 was higher than long term expectations. In addition, there were more retiree deaths during calendar year 2021 than anticipated by actuarial assumptions. Additional information related to System assets is shown on pages C-3 and C-4 of this report.

4. Reserve Transfers

In accordance with Ordinance Section 92-39(6), we have calculated the actuarial liability for members who have already retired (and their beneficiaries). This amount, along with the reported retiree reserve account balance is shown below:

Retiree Liability	$ 256,561,105
Retiree Reserve	260,262,979
Difference	(3,701,874)

The Board may wish to authorize the transfer of the difference shown above from the pension reserve fund to the retirement reserve fund.

5. System Funded Percent

The System's funding percent based on the actuarial value of assets is 193.9% as of December 31, 2021. Note that as of this measurement date, virtually all System assets were held within the GERS trust. As of May 5, 2022 the market value of assets held within the GERS trust was reported to be $412 million. If the System's funded percent were measured as of May 5, 2022 the funded percent would be significantly less than 193.9%. As of December 31, 2020, the funding percent based on the actuarial value of assets was 176.8%.

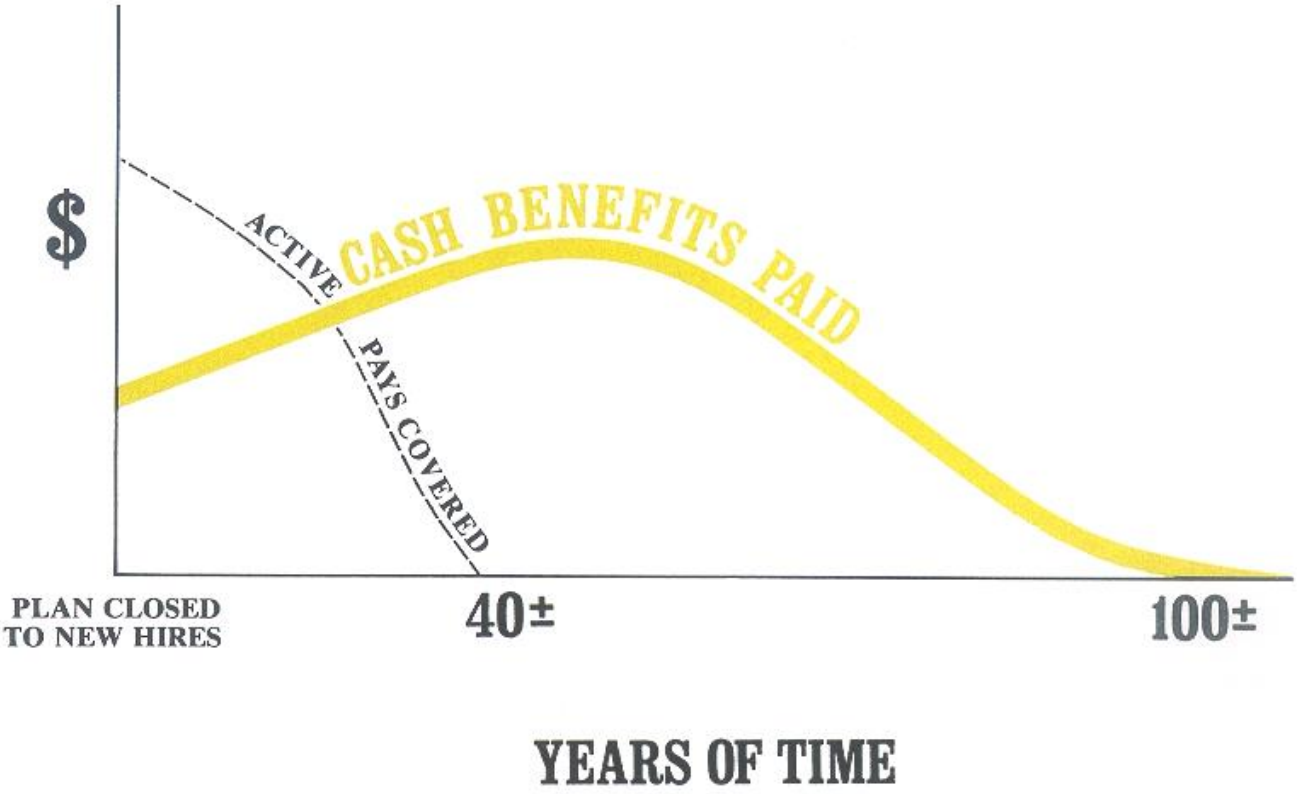
Unless otherwise indicated, a funding status measurement presented in this report is based upon the System's actuarial accrued liability and the actuarial value of System assets. It is important to note that the funding status measurement presented in this report is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations and the need for or the amount of future employer contributions.

6. Other

As a result of the pension plan termination, we have identified three individuals who were active members of the System on March 31, 2021 and terminated City employment after this date and may be vested and eligible for benefits. We will work with the System administrator to determine benefit eligibility and benefit amounts if applicable.

One of the Board's goals is to reduce the System's investment risk. Based upon the System's asset allocation as of December 31, 2021, no change was made to the current investment return assumption (6.0% net of investment expenses). However, this report also includes a valuation of the System using a 4.5% investment return assumption to illustrate the impact of a lower risk investment portfolio on System liabilities and funding percent.

A CLOSED PENSION PLAN



A plan becomes closed when no new hires are admitted to active membership. The persons covered by the plan at the time of closing continue their normal activities and continue to be covered by the plan, until the last survivor dies.

CASH BENEFITS LINE. After a pension plan becomes closed, the usual pattern is for cash benefits to continue to increase for decades of time. Eventually the cash benefits will peak, and then gradually decrease over more decades of time, ultimately to zero. The last cash benefit is likely to occur a century after the time the plan is closed.

The precise amounts of cash benefits cannot be known now, and must be estimated by assumptions of future experiences in a variety of financial risk areas.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The determination of the actuarial liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the actuarial liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

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 due to changing conditions; 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 System's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. **Investment risk** – actual investment returns may differ from the expected returns;
2. **Asset/Liability mismatch** – changes in asset values may not match changes in liabilities, thereby altering the gap between the actuarial liability and assets and consequently altering the funded status and contribution requirements;
3. **Contribution risk** – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. **Salary and Payroll risk** – actual salaries and total payroll may differ from expected, resulting in actual future actuarial liability and contributions differing from expected;
5. **Longevity risk** – members may live longer or shorter than expected and receive pensions for a period of time other than assumed; and
6. **Other demographic risks** – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future actuarial liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

SECTION B

VALUATION RESULTS

Computed Employer Contribution for the Fiscal Year Beginning July 1, 2023

Contributions for	Expressed as Dollar Amounts
A. Normal Cost of Benefits	
Age & Service	$ 200,402
Disability	24,315
Death-in-service	2,614
Total Normal Cost	227,331
B. Member Contributions	0
C. Administrative Expense	799,492
D. Employer Normal Cost	1,026,823
E. UAL Credit*	(17,959,179)
F. Total Employer Contribution (D+E)	0

** Unfunded Accrued Liabilities (UAL) were amortized over a period of 30 years using level dollar financing.*

The employer contribution for the City's 2023-2024 budget year shown above, was based upon a 6.0% discount rate. If the employer contribution was developed using a 4.5% discount rate, the employer contribution for the 2023-2024 budget year would still be $0.

Determination of Unfunded Actuarial Accrued Liability Using an Investment Return Assumption of 6.00% as of December 31, 2021

A. Accrued Liability		
1. For retirees and beneficiaries	$	256,561,105
2. For vested and other terminated members		7,983,939
3. For present active members		
a. Value of expected future benefit payments		7,872,813
b. Value of future normal costs		1,468,909
c. Active member accrued liability: (a) - (b)		6,403,904
4. Total accrued liability		270,948,948
B. Valuation Assets		525,498,150
C. Unfunded Accrued Liability: (A.4) - (B)		(254,549,202)
D. Funding Ratio: (B) / (A.4)		193.9%

The valuation assets shown above were based upon audited financial statements as of December 31, 2021 and are shown in detail on pages C-3 and C-4 of this report. The valuation assets ($525,498,150) do not reflect the assets that were transferred out of the pension trust after December 31, 2021. If the valuation was performed as of May 5, 2022 the System's funding percent would be significantly lower than item D shown above, since the market value of assets held within the GERS trust was reported to be $412 million on this date.

Determination of Unfunded Actuarial Accrued Liability Using an Investment Return Assumption of 4.50% as of December 31, 2021

A.	Accrued Liability		
	1. For retirees and beneficiaries	$	295,303,893
	2. For vested and other terminated members		10,370,873
	3. For present active members		
	a. Value of expected future benefit payments		10,367,827
	b. Value of future normal costs		2,366,703
	c. Active member accrued liability: (a) - (b)		8,001,124
	4. Total accrued liability		313,675,890
B.	Valuation Assets		525,498,150
C.	Unfunded Accrued Liability: (A.4) - (B)		(211,822,260)
D.	Funding Ratio: (B) / (A.4)		167.5%

The valuation assets shown above were based upon audited financial statements as of December 31, 2021 and are shown in detail on pages C-3 and C-4 of this report. The valuation assets ($525,498,150) do not reflect the assets that were transferred out of the pension trust after December 31, 2021. If the valuation was performed as of May 5, 2022 the System's funding percent would be significantly lower than item D shown above since the market value of assets held within the GERS trust was reported to be $412 million on this date.

Development of Experience Gain/(Loss)
Period Ended December 31, 2021

Actual experience will never (except by coincidence) exactly match assumed experience. It is hoped that gains and losses will cancel each other over a period of years, but sizable year-to-year fluctuations are common. Detail on the derivation of the experience gain (loss) is shown below.

(1)	UAAL at start of period	$(220,607,667)
(2)	Normal cost for period	251,497
(3)	Actual contributions	0
(4)	Interest accrual on (1), (2) and (3)	(13,228,915)
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	(233,585,085)
(6)	Change from plan provisions	0
(7)	Assumption changes	0
(8)	Expected UAAL after changes: (5) + (6) + (7)	(233,585,085)
(9)	Actual UAAL at end of period	(254,549,202)
(10)	Gain/(loss): (8) - (9)	20,964,117

SECTION C

SUMMARY OF BENEFIT PROVISIONS AND VALUATION DATA

Summary of Benefit Provisions as of December 31, 2021

Regular Retirement

Employee Group	Eligibility^ Age	Eligibility^ Years of Service	Benefit Multiplier^	Post Retirement Adjustments+
Teamsters #214	50 55 60	with 30 or with 25 or with 10	2.50%	2.00% of original retirement income for 18 years
MAPE -hired after 6/30/16	60 Any	with 10 or with 30	1.50%	2.50% of original retirement income for 14 years
-hired before 7/1/16	50 55	with 25 or with 10	2.00%	
PPFDA	50 60	with 25 or with 10	2.25%	2.00% of original retirement income for 18 years
SAEA	50 60	with 25 or with 10	3.00%/2.50%/1.00%	2.00% of original retirement income for 18 years
AFSCME #2002/PPMA	50 60	with 25 or with 10	2.50%	2.00% of original retirement income for 18 years
Non-Union	50 55 60	with 25 or with 20 or with 10	2.50%	2.00% of original retirement income for 18 years
PMEA			2.00%	2.00% of original retirement income for 14 years
Hospital	55 60	with 25 or with 10	2.00%	Not eligible

+ *Varies by retirement date.*

^ *Varies by retirement date and/or hire or other effective date. For SAEA the 3.0% multiplier applies to the first 20 years of service, 2.5% for the next 5 years and 1% thereafter.*

Summary of Benefit Provisions
as of December 31, 2021

Eligibility	Amount
DEFERRED RETIREMENT	
10 or more years of service, benefit begins at age 60 (age 55 for MAPE if hired before 7/1/16); or with 25 or more years of service, benefit begins at age 55 (age 50 for MAPE if hired before 7/1/16).	Computed as a regular retirement but based upon service and final average earnings at termination date.
DUTY DEATH-IN-SERVICE	
No age or service requirements.	Payable upon expiration of workers compensation to the survivors of a member who died in the line of duty. Same amount that was paid by worker's compensation to widow, dependent widower, children under 18 and dependent parents.
NON-DUTY DEATH-IN-SERVICE	
10 years of service.	Computed as a regular retirement but actuarially reduced in accordance with a 100% joint and survivor election provided the member has an Option II election form on file with the Retirement Office.
DUTY DISABILITY	
No age or service requirements.	Computed as a regular retirement benefit. Upon termination of worker's compensation additional service credit is granted for period in receipt of worker's compensation and benefit is recomputed. Minimum benefit prior to voluntary retirement age is the greater of a) 15% of final average earnings, or b) an amount equal to worker's compensation benefit.
NON-DUTY DISABILITY	
10 or more years of service.	Same as a regular retirement, with a minimum benefit of 15% of final average earnings.
MEMBER CONTRIBUTIONS	
None	

The Retirement System is closed to all new City employees except for new employees of the MAPE employment group.

Reported Financial Information at Market Value
Year Ended December 31, 2021

Revenue and Disbursements

Market Value of Assets Beginning of Year:	$549,899,379
Revenues:	
a. Member contributions	
b. Employer contributions	
c. Net investment income	84,781,999
d. Total	84,781,999
Disbursements:	
a. Pension benefits and refunds	26,888,924
b. Administrative expenses	799,492
c. Other[(1)]	8,000,000
d. Total	35,688,416
Market Value of Assets End of Year:	$598,992,962

(1) *Transfer to City for healthcare opt-outs*

The net market value yield on System assets during calendar year 2021 was 15.93%.

Assets and Reserves as of December 31, 2021

Assets:		**Reserve Accounts:**	
a. Cash and Short Term[(1)]	$ 31,097,064	a. Employee contributions	$ 150,859
b. Interest and Dividends	1,010,419	b. Reserve for retired benefit payments	260,262,979
c. Fixed Income	133,904,794	c. Reserve for employer contributions	338,579,124
d. Equities	360,835,575		
e. Real Estate	72,145,110		
Total	$ 598,992,962	Total	$598,992,962

(1) *Includes receivables and pre-paid amounts.*

Development of Valuation Assets

		2020	2021
A.	Funding Value Beginning of Year	$489,107,377	$507,799,642
B.	Market Value End of Year	549,899,379	598,992,962
C.	Market Value Beginning of Year	512,812,073	549,899,379
D.	Non-Investment Net Cash Flow	(27,495,569)	(35,688,416)
E.	Investment Income		
	E1. Market Total: B - C - D	64,582,875	84,781,999
	E2. Assumed Rate	7.00%	6.00%
	E3. Amount for Immediate Recognition:		
	(E2) x (A + D/2)	33,275,171	29,397,326
	E4. Amount for Phased-In Recognition: E1-E3	31,307,704	55,384,673
F.	Phased-In Recognition of Investment Income		
	F1. Current Year: E4/5	6,261,541	11,076,935
	F2. First Prior Year	10,853,932	6,261,541
	F3. Second Prior Year	(11,305,411)	10,853,932
	F4. Third Prior Year	7,102,601	(11,305,411)
	F5. Fourth Prior Year	0	7,102,601
	F6. Total Recognized Investment Gain/(Loss)	12,912,663	23,989,598
G.	Preliminary Funding Value End of Year: A + D + E3 + F6	$507,799,642	$525,498,150
H.	Upper Corridor Limit (120% x B)	659,879,255	718,791,554
I.	Lower Corridor Limit (80% x B)	439,919,503	479,194,370
J.	**Funding Value End of Year: A + D + E3 + F6**	**$507,799,642**	**$525,498,150**
K.	**Recognized Rate of Return**	**9.72%**	**10.90%**
L.	**Market Value Rate of Return**	**12.94%**	**15.93%**

Note: Item D above includes a disbursement of $8,000,000 due to a transfer to the City for retiree healthcare opt-outs in calendar year 2021 and an audit adjustment reported to be $5,193 in calendar year 2020.

Retirees and Beneficiaries as of December 31, 2021
Tabulated by Retirement Type

Age	Age and Service		Death-in-Service Survivor		Disability		Totals	
	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances
20 - 24	1	$ 2,579	1	$ 23,880			2	$ 26,459
25 - 29	1	2,820					1	2,820
30 - 34	1	5,554			1	$ 10,937	2	16,491
35 - 39								
40 - 44	6	52,770	2	59,129	2	18,139	10	130,038
45 - 49	11	163,059			2	19,711	13	182,770
50 - 54	22	433,262					22	433,262
55 - 59	40	953,833	2	26,273	3	67,965	45	1,048,071
60 - 64	125	2,420,661	1	17,071	6	121,543	132	2,559,275
65 - 69	163	4,400,416	2	69,367	7	172,593	172	4,642,376
70 - 74	222	5,323,628	1	31,472	14	260,791	237	5,615,891
75 - 79	156	3,102,725	5	40,918	7	125,148	168	3,268,791
80 - 84	92	1,295,535	3	65,106	8	91,855	103	1,452,496
85 - 89	70	1,318,100	1	16,352	5	55,384	76	1,389,836
90+	46	647,381	2	8,297	4	21,868	52	677,546
Totals	**956**	**$20,122,323**	**20**	**$357,865**	**59**	**$965,934**	**1,035**	**$21,446,122**

Valuation Division	Number	Total Benefits
General	664	$ 18,134,069
Hospital	371	3,312,053

The annual benefits shown in the schedule above do not include the stipend benefit of $400 per month.

Inactive Members as of December 31, 2021
Tabulated by Attained Age

Inactive members included in the valuation and their estimated annual pension benefits are summarized in the table below. An inactive member is a person who has left covered employment after becoming eligible for a retirement benefit, but has not yet applied for a retirement allowance.

Valuation Division	Number of Members	Estimated Benefits
General	84	$728,951
Hospital	13	19,280
Total	97	$748,231

Active Members as of December 31, 2021
by Age and Years of Service

Age	Years of Service on Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
25-29	4							4	$ 128,570
30-34	3							3	89,900
35-39		1		1				2	105,622
40-44	2							2	77,580
45-49	2				2			4	181,129
50-54			2	1	2			5	393,456
55-59	1			1	1	1		4	205,282
60				1				1	47,861
64			1					1	65,548
Totals	**12**	**1**	**3**	**4**	**5**	**1**	**0**	**26**	**$ 1,294,948**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 44.6 years
Service: 10.6 years
Annual Pay: $ 49,806

The chart above includes 9 non-union employees and 17 MAPE employee members of the System.

SECTION D

ACTUARIAL METHODS, ACTUARIAL ASSUMPTIONS AND GLOSSARY

Valuation Methods

The Individual Entry-Age Actuarial Cost Method is a method for determining the normal cost and the allocation of benefit values between service rendered before and after the valuation date. It has the following characteristics:

(i) the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement; and
(ii) each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gains/(losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

Financing Unfunded Actuarial Accrued Liabilities - As of the valuation date, System assets exceed System Actuarial Accrued Liabilities resulting in a funding surplus. This surplus was amortized over an open 30-year period using a level dollar amortization method.

Valuation Assets - The funding value of assets recognizes assumed investment income fully each year. Differences between actual and assumed investment income are phased-in over a closed 5-year period. During periods when investment performance exceeds the assumed rate, funding value of assets will tend to be lower than market value. During periods when investment performance is less than the assumed rate, funding value of assets will tend to be greater than market value. The funding value of assets is unbiased with respect to market value. At any time it may be either greater or less than market value. The funding value of assets is not permitted to deviate from the market value of assets by more than 20%.

Actuarial Assumptions Used in the Valuation

Investment Return: 6.00% per year net of investment expenses. The assumed real rate of investment return is in excess of either wage or price inflation. Considering a wage inflation assumption of 2.5% and a price inflation assumption of 2.0% the 6.00% nominal return translates into a real rate of investment return of 3.50% over wage inflation and 4.00% over price inflation. This assumption was first used for the December 31, 2020 valuation.

Pay Projections: These assumptions are used to project current pays to those upon which benefits will be based. The base economic assumption was first used for the December 31, 2016 valuation.

Sample Ages	Annual Rate of Pay Increase for Sample Ages		
	Base (Economic)	Merit & Longevity	Total
20	2.50%	4.90%	7.40%
25	2.50	3.70	6.20
30	2.50	2.90	5.40
35	2.50	2.10	4.60
40	2.50	1.60	4.10
45	2.50	1.40	3.90
50	2.50	1.30	3.80
55	2.50	1.10	3.60
60	2.50	1.10	3.60

Mortality: The mortality tables shown below were first used in the December 31, 2020 valuation.

- **Healthy Pre-Retirement:** The Pub-2010 Amount-Weighted, General, Employee, Male and Female tables, with future mortality improvements projected generationally to 2030 using scale MP-2019.

- **Healthy Post-Retirement:** The Pub-2010 Amount-Weighted, General, Healthy Retiree, Male and Female tables, with future mortality improvements projected generationally to 2030 using scale MP-2019 with male and female rates scaled by 95%.

- **Disability Retirement:** The Pub-2010 Amount-Weighted, General, Disabled Retiree, Male and Female, with future mortality improvements projected generationally to 2030 using scale MP-2019.

Sample Ages	Future Life Expectancy Years*					
	Healthy Pre-Retirement		Healthy Post-Retirement		Disabled Retirement	
	Men	Women	Men	Women	Men	Women
50	37.90	40.02	34.49	37.32	24.84	27.37
55	33.17	35.19	29.95	32.69	21.72	24.27
60	28.53	30.42	25.55	28.15	18.89	21.38
65	24.00	25.72	21.32	23.69	16.24	18.43
70	19.55	21.09	17.25	19.37	13.61	15.30
75	15.17	16.55	13.44	15.27	10.97	12.18
80	10.84	12.10	10.01	11.53	8.48	9.36

** The life expectancies are based on ages in calendar year 2021 and life expectancies in future years are determined by the generational MP-2019 projection scale.*

Rates of Disability: These rates represent the probabilities of active members becoming disabled.

Sample Ages	Percent Becoming Disabled within Next Year
	All Members
20	0.42%
25	0.42
30	0.45
35	0.51
40	0.67
45	0.92
50	1.36
55	2.20

All disabilities were assumed to be non-duty disabilities.

Rates of Separation from Active Membership: The rates do not apply to members eligible to retire and do not include separation on account of death or disability. This assumption measures the probabilities of members remaining in City employment.

Sample Ages	Completed Years of Service	% of Active Members Separating within Next Year All Members
ALL	0	20.00%
	1	18.00%
	2	15.00%
	3	12.00%
	4	10.00%
25	5 & Over	7.00%
30		6.00%
35		4.75%
40		3.50%
45		2.40%
50		1.50%
55		1.00%
60		1.00%
65		1.00%

Rates of Retirement: These rates are used to measure the probabilities of an eligible member retiring during the next year.

Percent of Active Members Retiring within One Year	
All Members	
Ages	**%**
50	35%
51	30
52	25
53	25
54	25
55	25
56	25
57	50
58	50
59	50
60	20
61	25
62	30
63	30
64	25
65	50
66	100

Eligibility for retirement benefits is shown in Section C of this report.

Miscellaneous and Technical Assumptions

Administrative Expense	The normal cost contribution includes a contribution for administrative expenses and was first used in the December 31, 2020 valuation of the System.
Benefit Service	Exact fractional service is used to determine the amount of benefit payable.
Death While Active Member	It was assumed that death during active employment was non-duty related.
Decrement Operation	Disability and withdrawal decrements do not operate during retirement eligibility.
Decrement Timing	Decrements of all types are assumed to occur mid-year.
Eligibility Testing	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Incidence of Contributions	Contributions (if any) are assumed to be received continuously throughout the year.
Liability Adjustments	Liabilities were loaded by 5.4% to account for contingencies including potential future stipend payments and benefits payable to future retirees eligible under Public Act 88 of 1961 (the reciprocal Act) and terminated individuals who became vested based upon plan termination provisions. In addition, for active members, normal retirement liabilities were loaded by 3% and terminated vested liabilities were loaded by 1% to account for the member's right to use lump sum payments for unused sick leave at retirement. These liability loads were first used in the December 31, 2020 valuation of the System.
Normal Form of Payment	The normal form of benefit is a straight life annuity.
Pay Increase Timing	Beginning of the year.
Service Credit Accruals	It is assumed that members accrue one year of service credit per year in the future.

Glossary

Actuarial Accrued Liability - The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability." Under the actuarial cost method used the "AAL" differs somewhat from the value of future payments based on benefits earned as of the valuation date.

Accrued Service - The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Assumptions - Estimates of future plan experience with respect to rates of mortality, disability, retirement, investment income and salary increases. Decrement assumptions (rates of mortality, separation 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 appropriate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method - A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the normal costs to be paid in the future and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

Actuarial Equivalent - Benefits whose actuarial present values are equal.

Actuarial Present Value - The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Amortization - Paying off an interest-bearing liability by means of periodic contributions of interest and principal, as opposed to a lump sum payment.

Experience Gain (Loss) - A measure of the difference between actual experience and experience anticipated by a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

Normal Cost - The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." An amortization payment toward the unfunded actuarial accrued liability is in addition to the normal cost.

Glossary

Reserve Account - An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability - The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability."

Valuation Assets - The value of current plan assets recognized for valuation purposes.

SECTION E

OTHER FINANCIAL DISCLOSURES

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Entry Age Accrued Liability (b)	Unfunded AAL (UAAL) (b) – (a)	Funded Percent (a) / (b)	Valuation Payroll (c)	UAAL as a % of Valuation Payroll [(b) – (a)] / (c)
12/31/2000@	$378,063,942	$217,942,909	$ (160,121,033)	173.5 %	$18,728,688	- -
12/31/2001@#	395,743,819	227,901,435	(167,842,384)	173.6	19,887,803	- -
12/31/2002@	393,214,033	235,422,367	(157,791,666)	167.0	20,039,136	- -
12/31/2003	394,367,065	247,396,857	(146,970,208)	159.4	20,807,612	- -
12/31/2004	394,807,254	258,365,787	(136,441,467)	152.8	21,320,477	- -
12/31/2005	391,409,757	260,103,260	(131,306,497)	150.5	16,751,815	- -
12/31/2006	409,983,490	266,457,429	(143,526,061)	153.9	14,996,753	- -
12/31/2007	433,028,186	257,940,349	(175,087,837)	167.9	N/A	- -
12/31/2008	416,678,512	261,497,756	(155,180,756)	159.3	N/A	- -
12/31/2009	405,193,572	255,720,207	(149,473,365)	158.5	N/A	- -
12/31/2010	399,573,669	253,866,554	(145,707,115)	157.4	N/A	- -
12/31/2011	383,349,729	249,739,988	(133,609,741)	153.5	N/A	- -
12/31/2012	369,621,671	247,968,743	(121,652,928)	149.1	N/A	- -
12/31/2013	396,857,874	279,931,726	(116,926,148)	141.8	N/A	- -
12/31/2014	413,418,482	270,139,151	(143,279,331)	153.0	N/A	- -
12/31/2015#	417,151,476	252,615,769	(164,535,707)	165.1	1,528,731	- -
12/31/2016#@	466,143,339	264,736,702	(201,406,637)	176.1	1,540,472	- -
12/31/2017@	478,026,270	267,204,399	(210,821,871)	178.9	1,450,352	- -
12/31/2018	478,099,013	262,283,618	(215,815,395)	182.3	1,427,628	- -
12/31/2019	489,107,377	256,329,118	(232,778,259)	190.8	1,391,765	- -
12/31/2020#	507,799,642	287,191,975	(220,607,667)	176.8	1,349,022	- -
12/31/2021#	525,498,150	270,948,948	(254,549,202)	193.9	1,294,948	- -

Results for the 2007-2015 valuations were prepared by previous actuarial firms and are shown here for comparison.

 # Assumption/method change.

@ Plan provision changes.

Schedule of Employer Contributions

Valuation Date December 31,	Fiscal Year Beginning July 1,	Actuarially Computed Employer Contribution[1]
2000 [2]		$158,921
2001 [2,3]		140,226
2002 [2]		49,456
2003	2005	49,163
2004	2006	0
2005	2007	0
2006	2008	0
2007	2009	0
2008	2010	0
2009 [2]	2011	0
2010	2012	0
2011	2013	0
2012	2014	0
2013	2015	0
2014	2016	0
2015 [3]	2017	0
2016 [3]	2018	0
2017 [2]	2019	0
2018	2020	0
2019	2021	0
2020 [3]	2022	0
2021 [3]	2023	0

[1] *For years prior to 2016, information was provided by the Retirement System. Contribution amounts for valuation years 2007-2015 were prepared by prior actuaries.*

[2] *Plan provision change*

[3] *Assumption/method change*

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June 23, 2022

Ms. Deborah Munson
Executive Director
City of Pontiac General Employees' Retirement System
2201 Auburn Road, Suite B
Auburn Hills, Michigan 48326

Dear Deborah:

Enclosed is 1 copy of the report of the December 31, 2021 annual actuarial valuation of the pension liabilities covering the City of Pontiac General Employees' Retirement System .

Sincerely,
Gabriel, Roeder, Smith & Company

Louise M. Gates, ASA, FCA, MAAA

Enclosure

One Towne Square | Suite 800 | Southfield, Michigan 48076-3723