

**PENNRIDGE REGIONAL POLICE DEPT**

**09-910-7 P.0238**

**GASB 68 Report**

**Measurement Date of:**

**December 31, 2022**

For questions, please contact:  
Richard Cardamone, CPA, CGMA  
Chief Financial Officer  
Pennsylvania Municipal Retirement System  
717-787-2065  
[PMRS.Finance@pa.gov](mailto:PMRS.Finance@pa.gov)

## TABLE OF CONTENTS

### Table of Contents

- Summary
- Certification
- Determination of Discount Rate
- Notes Disclosures
- Required Supplementary Information
- Employer Reporting Amounts
- Appendix A – Data, Plan Provisions, and Risk Disclosure
- Appendix B – Reconciliation of Deferred Inflows and Outflows
- Appendix C – Further Information Regarding Deferred Inflows and Outflows
- Appendix D – Market Value of Assets Reconciliation
- Appendix E – Actuarial Assumptions and Methods
- Appendix F – Glossary of Terms
- Appendix G – Additional Information

**SUMMARY**

The purpose of this report is to provide accounting and financial reporting information under Governmental Accounting Standards Board Statement No. 68 as amended by Statement Nos. 73 and 82 for Penridge Regional Police Dept (the Employer).

This information includes:

- Employees covered by benefit terms,
- Calculation of the Net Pension Liability at the discount rate as well as discount rates 1% higher and lower than the discount rate,
- Changes in the Net Pension Liability,
- Schedule of Employer Contributions,
- Disclosure of Deferred Inflows and Outflows,
- Calculation of Annual Pension Expense, and
- Description of Actuarial Assumptions and Methods/Glossary of Terms

**Highlights**

The Pennsylvania Municipal Retirement System (PMRS) is an agent multiple-employer defined benefit pension plan. The key results for the Current and Prior Measurement Dates are provided below.

| <b>Summary of Results</b>               |                         |                   |
|---|-------------------------|-------------------|
|   | <b>Measurement Date</b> |                   |
|   | <b>12/31/2022</b>       | <b>12/31/2021</b> |
| Net Pension Liability (Asset)           | \$ 1,043,833            | \$ (1,286,534)    |
| Deferred Inflows                        | 0                       | 1,323,994         |
| Deferred Outflows                       | (958,192)               | (321,133)         |
| Net Impact on Statement of Net Position | \$ 85,641               | \$ (283,673)      |
| Total Payroll                           | \$ 1,126,421            | \$ 1,108,112      |
| Total Pension Expense (\$ Amount)       | \$ 492,859              | \$ (130,797)      |
| Total Pension Expense (% of Payroll)    | 43.75%                  | -11.80%           |

Any Employer contributions made between the Measurement Date and the Reporting Date would be reported as deferred outflows to offset the cash outflow reported.

The following “GASB Date Table” outlines the measurement, valuation, and reporting dates used for the prior and current year reports.

|                | <b>Measurement Date</b> | <b>Valuation Date</b> | <b>Reporting Date Range</b>           |
|----------------|-------------------------|-----------------------|---------------------------------------|
| <b>Current</b> | December 31, 2022       | January 1, 2023       | December 31, 2022 – December 31, 2023 |
| <b>Prior</b>   | December 31, 2021       | January 1, 2021       | December 31, 2021 – December 31, 2022 |

The Total Pension Liability (TPL) for each Measurement Date is based on the actuarial valuation as of the corresponding Valuation Date listed above. The TPL is rolled forward from the Valuation Date (where applicable), with adjustments for any material changes that are effective on or before the applicable Measurement Date, such as plan or assumption changes as outlined in Appendix A and Appendix E of the current and prior year reports.

A breakdown of the components of the net pension expense is shown later in the report.

### CERTIFICATION

This report is for the use of the Employer and the Employer's auditors in preparing financial reports in accordance with applicable laws and accounting requirements. This report is not appropriate for other purposes, including the measurement of the Employer's funding requirements under Act 205.

In preparing our report, we relied on information (some oral and some written) supplied by PMRS. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23, Data Quality. It is our understanding that PMRS, as the plan administrator, reviews the data for accuracy based on information provided by the Employer.

Future actuarial measurements may differ significantly from the current measurements 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; and changes in plan provisions or applicable law.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

This report was prepared for PMRS for the purposes described herein and for the use by the Employer and the Employer's auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to other users besides PMRS.



Bonnie Rightnour, FSA, EA, MAAA  
Principal Consulting Actuary



Elizabeth Wiley, FSA, EA, MAAA, FCA  
Consulting Actuary

### **DETERMINATION OF DISCOUNT RATE**

The determination of the discount rate is based on the long-term expected rate of return for individual participating municipalities which PMRS develops and is also referred to as the Regular Interest Rate. For more information, please refer to the file titled “2022 Long-Term Expected Rate of Return on Plan Assets” located under the 2022 GASB Reports section of the PMRS website (<https://www.pmrsp.pa.gov/employers/financial-reporting-information/governmental-accounting-standards-board-gasb/>).

Based on the assumptions outlined in the publication described above including the assumption that all MMO payments as determined and required under Act 205 will be paid accordingly, the Plan Fiduciary Net Position was determined to be available to make all projected benefit payments of current plan members. Therefore, the municipal long-term expected rate of return for municipal and member accounts was applied to discount all periods of projected benefit payments to determine the Total Pension Liability.

**NOTES DISCLOSURES**

The table below shows the changes in the Total Pension Liability and the Plan Fiduciary Net Position (i.e., fair value of Plan assets) during the Measurement Period, and the Net Pension Liability (NPL) as of the Measurement Date.

This report does not reflect changes in benefits, assumptions, or reserve accounts after the Measurement Date. Except where noted below, the TPL as of December 31, 2022 was based on the data, actuarial methods and assumptions, and plan provisions described in Appendix A and Appendix E. The assumptions used to determine the TPL as of the December 31, 2021 measurement date can be found in the January 1, 2022 PMRS actuarial valuation report or the prior year's GASB report.

|  | <b>Change in Net Pension Liability</b>     |  |  |
|--|--|--|--|
|  | <b>Increase (Decrease)</b>                 |  |  |
|  | <b>Total Pension<br/>Liability<br/>(a)</b> | <b>Plan Fiduciary<br/>Net Position<br/>(b)</b> | <b>Net Pension<br/>Liability (Asset)<br/>(a) - (b)</b> |
| <b>Balances at 12/31/2021</b>                      | <b>\$ 8,490,470</b>                        | <b>\$ 9,777,004</b>                            | <b>\$ (1,286,534)</b>                                  |
| <b>Changes for the year:</b>                       |  |  |  |
| Service cost                                       | 192,668                                    |  | 192,668  |
| Interest   | 443,474                                    |  | 443,474  |
| Changes of benefit terms                           |  |  |  |
| Changes of assumptions                             |  |  |  |
| Differences between expected and actual experience | 838,640                                    |  | 838,640  |
| Contributions - employer                           |  | 123,025  | (123,025)  |
| Contributions - PMRS assessment                    |  | 520  | (520)  |
| Contributions - employee                           |  | 56,320   | (56,320)   |
| PMRS investment income                             |  | 420,007  | (420,007)  |
| Market value investment income*                    |  | (1,432,745)                                    | 1,432,745  |
| Transfers  |  |  |  |
| Benefit payments                                   | (478,158)                                  | (478,158)                                      |  |
| PMRS administrative expense                        |  | (520)  | 520  |
| Additional administrative expense                  |  | (22,192)                                       | 22,192   |
| <b>Net changes</b>                                 | <b>996,624</b>                             | <b>(1,333,743)</b>                             | <b>2,330,367</b>                                       |
| <b>Balances at 12/31/2022</b>                      | <b>\$ 9,487,094</b>                        | <b>\$ 8,443,261</b>                            | <b>\$ 1,043,833</b>                                    |

\*Reflects the net investment income/(loss) of (\$1,649,242) and the income/(loss) due to the difference between expected and actual asset values of \$216,497, which includes the impact from allocation of assets in support of the underlying retiree liabilities.

**NOTES DISCLOSURES**

According to Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68, PMRS is required to allocate/distribute all funds to the respective participating employers for financial reporting purposes to determine the respective Employer “Plan Fiduciary Net Position.”

PMRS has determined that net investment income or loss and administrative expenses will be allocated to the employer/municipality accounts pro-rata based on their beginning Plan Fiduciary Net Position balance adjusted for cash flows throughout the year. The “additional administrative expenses” are the expenses in excess of the “PMRS administrative expense” (i.e., \$20 per participant expense paid by each plan). The “PMRS investment income” is based on the regular interest used to credit accounts annually. The “market value investment income” reflects the investment income/(loss) during the year net of PMRS investment income and the income/(loss) due to the difference between expected and actual asset values, including the impact from allocation of assets in support of the underlying retiree liabilities.

Changes in the discount rate affect the measurement of the TPL. Lower discount rates produce a higher TPL and higher discount rates produce a lower TPL. Because the discount rate does not affect the measurement of assets, the percentage change in the NPL can be very significant for a relatively small change in the discount rate. The table below shows the sensitivity of the NPL to the discount rate with two additional measures, plus and minus one percent from the rate used for disclosure.

| <b>Sensitivity of Net Pension Liability to Changes in Discount Rate</b>          |                                  |                                    |                                  |
|--|----------------------------------|------------------------------------|----------------------------------|
|  | <b>1%<br/>Decrease<br/>4.25%</b> | <b>Discount<br/>Rate<br/>5.25%</b> | <b>1%<br/>Increase<br/>6.25%</b> |
| Total Pension Liability  | \$ 10,740,091                    | \$ 9,487,094                       | \$ 8,458,813                     |
| Plan Fiduciary Net Position  | <u>8,443,261</u>                 | <u>8,443,261</u>                   | <u>8,443,261</u>                 |
| Net Pension Liability (Asset)  | <u>\$ 2,296,830</u>              | <u>\$ 1,043,833</u>                | <u>\$ 15,552</u>                 |
| Plan Fiduciary Net Position as a<br>Percentage of the Total Pension<br>Liability | 78.61%                           | 89.00%                             | 99.82%                           |

**NOTES DISCLOSURES**

The following table contains the number of active employees, inactive employees entitled to but not yet receiving benefits, and inactive employees or beneficiaries currently receiving benefits from the Plan based on the most recent full actuarial valuation date of January 1, 2023.

| <b>Employees Covered by Benefit Terms</b>                        |           |
|--|-----------|
| Inactive employees or beneficiaries currently receiving benefits | 15        |
| Inactive employees entitled to but not yet receiving benefits    | 1         |
| Active employees   | <u>12</u> |
| Total Participant Count  | 28        |

**REQUIRED SUPPLEMENTARY INFORMATION**

The schedules of Required Supplementary Information will eventually build up to 10 years of information. The schedule below shows the changes in NPL and related ratios required by GASB. Benefit payments include employee refunds, if applicable.

| <b>Schedule of Changes in Net Pension Liability</b>                               |                       |                       |                     |                     |                     |
|---|-----------------------|-----------------------|---------------------|---------------------|---------------------|
| Measurement Date as of:   | 12/31/2022            | 12/31/2021            | 12/31/2020          | 12/31/2019          | 12/31/2018          |
| <b><u>Total Pension Liability</u></b>   |                       |                       |                     |                     |                     |
| Service cost (beginning of year)  | \$ 192,668            | \$ 189,536            | \$ 167,498          | \$ 147,618          | \$ 142,273          |
| Interest  | 443,474               | 441,352               | 402,074             | 389,898             | 371,548             |
| Changes of benefit terms  |                       |                       |                     |                     | 40,193              |
| Differences between expected and actual experience                                | 838,640               |                       | 337,296             |                     | 109,485             |
| Changes of assumptions  |                       |                       | 304,969             |                     |                     |
| Transfers   |                       |                       |                     |                     |                     |
| Benefit payments  | (478,158)             | (706,132)             | (270,907)           | (378,637)           | (261,491)           |
| <b>Net change in total pension liability</b>                                      | <b>\$ 996,624</b>     | <b>\$ (75,244)</b>    | <b>\$ 940,930</b>   | <b>\$ 158,879</b>   | <b>\$ 402,008</b>   |
| <b>Total pension liability - beginning</b>  | <b>8,490,470</b>      | <b>8,565,714</b>      | <b>7,624,784</b>    | <b>7,465,905</b>    | <b>7,063,897</b>    |
| <b>Total pension liability - ending</b>   | <b>\$ 9,487,094</b>   | <b>\$ 8,490,470</b>   | <b>\$ 8,565,714</b> | <b>\$ 7,624,784</b> | <b>\$ 7,465,905</b> |
| <b><u>Plan fiduciary net position</u></b>   |                       |                       |                     |                     |                     |
| Contributions - employer  | \$ 123,025            | \$ 114,683            | \$ 93,553           | \$ 72,956           | \$ 87,365           |
| Contributions - PMRS assessment   | 520                   | 500                   | 20                  | 420                 | 20                  |
| Contributions - employee  | 56,320                | 55,405                | 50,971              | 44,923              | 43,014              |
| PMRS investment income  | 420,007               | 411,131               | 380,958             | 381,314             | 348,593             |
| Market value investment income  | (1,432,745)           | 760,500               | 888,761             | 828,730             | (745,779)           |
| Transfers   |                       |                       |                     |                     |                     |
| Benefit payments  | (478,158)             | (706,132)             | (270,907)           | (378,637)           | (261,491)           |
| PMRS administrative expense   | (520)                 | (500)                 | (460)               | (420)               | (440)               |
| Additional administrative expense   | (22,192)              | (23,286)              | (16,598)            | (13,180)            | (15,556)            |
| <b>Net change in plan fiduciary net position</b>                                  | <b>\$ (1,333,743)</b> | <b>\$ 612,301</b>     | <b>\$ 1,126,298</b> | <b>\$ 936,106</b>   | <b>\$ (544,274)</b> |
| <b>Plan fiduciary net position - beginning</b>                                    | <b>9,777,004</b>      | <b>9,164,703</b>      | <b>8,038,405</b>    | <b>7,102,299</b>    | <b>7,646,573</b>    |
| <b>Plan fiduciary net position - ending</b>                                       | <b>\$ 8,443,261</b>   | <b>\$ 9,777,004</b>   | <b>\$ 9,164,703</b> | <b>\$ 8,038,405</b> | <b>\$ 7,102,299</b> |
| <b>Net pension liability (asset) - ending</b>                                     | <b>\$ 1,043,833</b>   | <b>\$ (1,286,534)</b> | <b>\$ (598,989)</b> | <b>\$ (413,621)</b> | <b>\$ 363,606</b>   |
| <b>Plan fiduciary net position as a percentage of the total pension liability</b> | 89.00%                | 115.15%               | 106.99%             | 105.42%             | 95.13%              |
| <b>Covered employee payroll</b>   | \$ 1,126,421          | \$ 1,108,112          | \$ 1,019,413        | \$ 898,422          | \$ 868,755          |
| <b>Net pension liability (asset) as a percentage of covered employee payroll</b>  | 92.67%                | -116.10%              | -58.76%             | -46.04%             | 41.85%              |

PENNRIDGE REGIONAL POLICE DEPT - 09-910-7 P.0238  
 GASB 68 MEASUREMENT DATE OF DECEMBER 31, 2022

**REQUIRED SUPPLEMENTARY INFORMATION**

| <b>Schedule of Changes in Net Pension Liability</b>                               |                            |                            |                            |                            |
|---|----------------------------|----------------------------|----------------------------|----------------------------|
| Measurement Date as of:   | 12/31/2017                 | 12/31/2016                 | 12/31/2015                 | 12/31/2014                 |
| <b><u>Total Pension Liability</u></b>   |                            |                            |                            |                            |
| Service cost (beginning of year)  | \$ 154,937                 | \$ 145,729                 | \$ 175,213                 | \$ 219,315                 |
| Interest  | 359,600                    | 348,330                    | 336,802                    | 327,509                    |
| Changes of benefit terms  |                            |                            |                            |                            |
| Differences between expected and actual experience                                |                            | 92,812                     | (2,452)                    | (148,658)                  |
| Changes of assumptions  |                            | 194,046                    | (40,180)                   |                            |
| Transfers   |                            |                            |                            |                            |
| Benefit payments  | (286,795)                  | (261,114)                  | (205,146)                  | (160,726)                  |
| <b>Net change in total pension liability</b>                                      | <b>\$ 227,742</b>          | <b>\$ 519,803</b>          | <b>\$ 264,237</b>          | <b>\$ 237,440</b>          |
| <b>Total pension liability - beginning</b>  | <b><u>6,836,155</u></b>    | <b><u>6,316,352</u></b>    | <b><u>6,052,115</u></b>    | <b><u>5,814,675</u></b>    |
| <b>Total pension liability - ending</b>   | <b><u>\$ 7,063,897</u></b> | <b><u>\$ 6,836,155</u></b> | <b><u>\$ 6,316,352</u></b> | <b><u>\$ 6,052,115</u></b> |
| <b><u>Plan fiduciary net position</u></b>   |                            |                            |                            |                            |
| Contributions - employer  | \$ 93,596                  | \$ 92,969                  | \$ 106,165                 | \$ 92,869                  |
| Contributions - PMRS assessment   |                            | 40                         | 60                         |                            |
| Contributions - employee  | 37,517                     | 27,771                     | 18,743                     | 18,638                     |
| PMRS investment income  | 361,602                    | 380,143                    | 353,839                    | 346,461                    |
| Market value investment income  | 802,151                    | 46,304                     | (377,212)                  | (78,595)                   |
| Transfers   |                            |                            |                            |                            |
| Benefit payments  | (286,795)                  | (261,114)                  | (205,146)                  | (160,726)                  |
| PMRS administrative expense   | (440)                      | (400)                      | (420)                      | (360)                      |
| Additional administrative expense   | (16,630)                   | (18,624)                   | (14,751)                   | (13,287)                   |
| <b>Net change in plan fiduciary net position</b>                                  | <b>\$ 991,001</b>          | <b>\$ 267,089</b>          | <b>\$ (118,722)</b>        | <b>\$ 205,000</b>          |
| <b>Plan fiduciary net position - beginning</b>                                    | <b><u>6,655,572</u></b>    | <b><u>6,388,483</u></b>    | <b><u>6,507,205</u></b>    | <b><u>6,302,205</u></b>    |
| <b>Plan fiduciary net position - ending</b>                                       | <b><u>\$ 7,646,573</u></b> | <b><u>\$ 6,655,572</u></b> | <b><u>\$ 6,388,483</u></b> | <b><u>\$ 6,507,205</u></b> |
| <b>Net pension liability (asset) - ending</b>                                     | <b><u>\$ (582,676)</u></b> | <b><u>\$ 180,583</u></b>   | <b><u>\$ (72,131)</u></b>  | <b><u>\$ (455,090)</u></b> |
| <b>Plan fiduciary net position as a percentage of the total pension liability</b> | 108.25%                    | 97.36%                     | 101.14%                    | 107.52%                    |
| <b>Covered employee payroll</b>   | \$ 946,090                 | \$ 946,054                 | \$ 951,475                 | \$ 1,175,566               |
| <b>Net pension liability (asset) as a percentage of covered employee payroll</b>  | -61.59%                    | 19.09%                     | -7.58%                     | -38.71%                    |

**REQUIRED SUPPLEMENTARY INFORMATION**

An Actuarially Determined Contribution is a contribution amount determined in accordance with Actuarial Standards of Practice. The Actuarially Determined Contribution provided is based on the Minimum Municipal Obligation as defined in Act 205 which conforms to these standards.

| <b>Schedule of Employer Contributions</b>                 |                    |                    |                    |                    |                    |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|
| Last 10 Measurement Years (if available)                  |                    |                    |                    |                    |                    |
|   | <b>2022</b>        | <b>2021</b>        | <b>2020</b>        | <b>2019</b>        | <b>2018</b>        |
| Actuarially Determined Contribution (ADC)                 | \$ 123,485         | \$ 115,143         | \$ 71,040          | \$ 61,281          | \$ 69,090          |
| Contributions in Relation to the ADC*                     | <u>123,545</u>     | <u>115,183</u>     | <u>93,573</u>      | <u>73,376</u>      | <u>87,385</u>      |
| Contribution Deficiency/(Excess)                          | <u>\$ (60)</u>     | <u>\$ (40)</u>     | <u>\$ (22,533)</u> | <u>\$ (12,095)</u> | <u>\$ (18,295)</u> |
| Covered Employee Payroll**                                | \$ 1,126,421       | \$ 1,108,112       | \$ 1,019,413       | \$ 898,422         | \$ 868,755         |
| Contributions as a Percentage of Covered Employee Payroll | 10.97%             | 10.39%             | 9.18%              | 8.17%              | 10.06%             |
|   | <b>2017</b>        | <b>2016</b>        | <b>2015</b>        | <b>2014</b>        |                    |
| Actuarially Determined Contribution (ADC)                 | \$ 77,745          | \$ 67,733          | \$ 106,165         | \$ 83,096          |                    |
| Contributions in Relation to the ADC*                     | <u>93,596</u>      | <u>93,009</u>      | <u>106,225</u>     | <u>92,869</u>      |                    |
| Contribution Deficiency/(Excess)                          | <u>\$ (15,851)</u> | <u>\$ (25,276)</u> | <u>\$ (60)</u>     | <u>\$ (9,773)</u>  |                    |
| Covered Employee Payroll**                                | \$ 946,090         | \$ 946,054         | \$ 951,475         | \$ 1,175,566       |                    |
| Contributions as a Percentage of Covered Employee Payroll | 9.89%              | 9.83%              | 11.16%             | 7.90%              |                    |

\*Information provided by PMRS and not reconciled to determine the cause of deviations from the Actuarially Determined Contribution (if applicable).

\*\*Beginning in 2015, amount is actual payroll. In 2014, amount is expected payroll based on the most recent actuarial valuation. These amounts may not match the MMO payroll.

**Notes to Schedules:**

Valuation Date: Actuarially determined contribution rates are calculated as of January 1 for the odd valuation year at least two years prior to the end of the fiscal year in which the contributions were reported. Therefore, the Actuarially Determined Contribution for calendar year 2022 is based on the January 1, 2019 actuarial valuation.

A summary of the key assumptions and methods used to determine the 2022 contribution rates:

- Actuarial Cost Method: Entry age
- Amortization Period: Level dollar based on the amortization periods in Act 205
- Asset valuation method: Based on the municipal reserves
- Discount Rate: 5.25%
- Inflation: 2.8%
- Salary increases: Age-related scale with merit and inflation component
- COLA increases: 2.8% for those eligible for a COLA

**REQUIRED SUPPLEMENTARY INFORMATION**

- Pre-Retirement Mortality: Males: RP-2000 non-annuitant male table projected 15 years with scale AA  
Females: RP-2000 non-annuitant female table projected 15 years with scale AA, setback five years
- Post-Retirement Mortality: Males: RP-2000 annuitant male table projected 5 years with scale AA  
Females: RP-2000 annuitant female table projected 10 years with scale AA

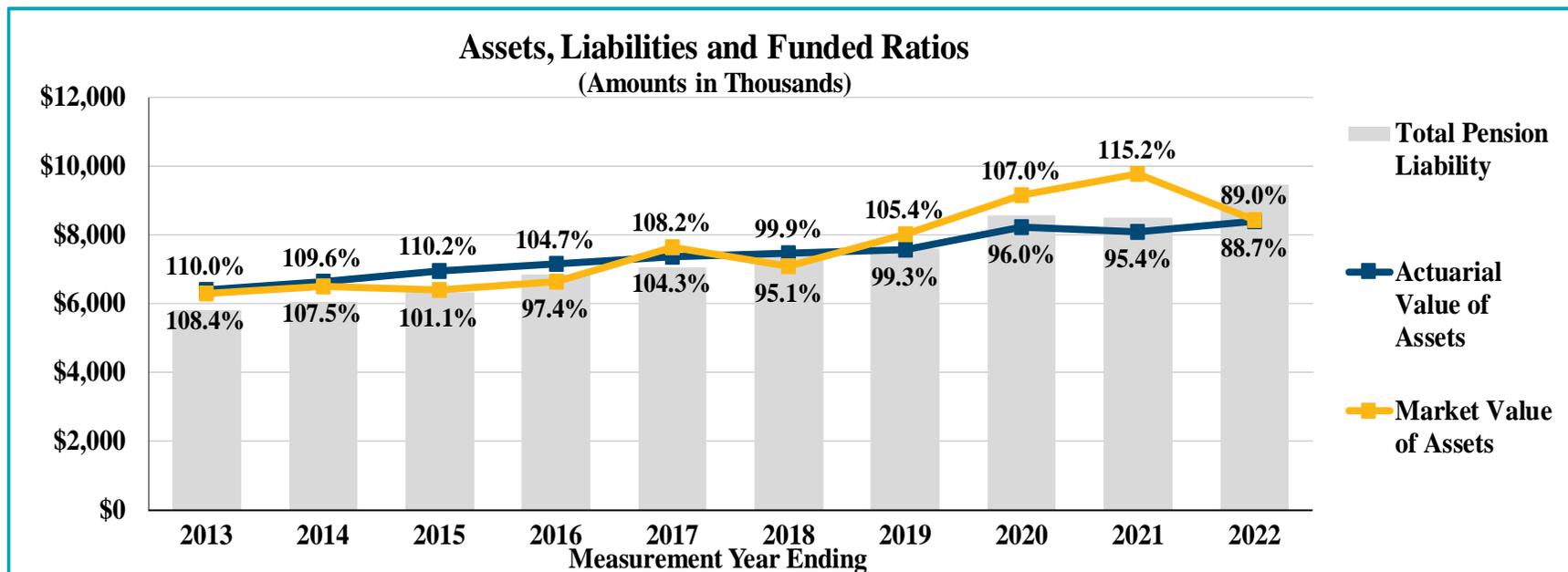
For a complete listing of all assumptions and methods, please refer to the PMRS January 1, 2019 actuarial valuation report.

Plan Changes: Please refer to Appendix A for current year plan changes and to the Plan's Act 205 filings and/or GASB 68 reports for prior year plan changes.

**REQUIRED SUPPLEMENTARY INFORMATION**

**Assets, Liabilities and Funded Ratio:**

In the following graph, the bars show the Plan’s liability (referred to as TPL for GASB 68 purposes and Actuarial Accrued Liability for funding purposes). The blue and gold lines show the Actuarial Value of Assets and the Market Value of Assets, respectively. The Market Value of Assets is the Plan Fiduciary Net Position used for GASB 68 purposes. The Actuarial Value of Assets is the asset value used for calculating the Actuarially Determined Contribution (i.e., the Minimum Municipal Obligation) and is described in Appendix E. The Market Value of Assets is provided in Appendix D. The funded ratios related to both asset measures are shown adjacent to the respective lines in the following graph.



| Measurement Year Ending         | 2013         | 2014         | 2015         | 2016         | 2017         | 2018         | 2019         | 2020         | 2021         | 2022         |
|---------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 1. Total Pension Liability      | \$ 5,814,675 | \$ 6,052,115 | \$ 6,316,352 | \$ 6,836,155 | \$ 7,063,897 | \$ 7,465,905 | \$ 7,624,784 | \$ 8,565,714 | \$ 8,490,470 | \$ 9,487,094 |
| 2. Actuarial Value of Assets*   | \$ 6,394,720 | \$ 6,631,209 | \$ 6,962,886 | \$ 7,158,634 | \$ 7,370,547 | \$ 7,460,828 | \$ 7,571,491 | \$ 8,222,807 | \$ 8,096,173 | \$ 8,414,309 |
| 3. AVA Funded Ratio [ 2. / 1. ] | 110.0%       | 109.6%       | 110.2%       | 104.7%       | 104.3%       | 99.9%        | 99.3%        | 96.0%        | 95.4%        | 88.7%        |
| 4. Market Value of Assets*      | \$ 6,302,205 | \$ 6,507,205 | \$ 6,388,483 | \$ 6,655,572 | \$ 7,646,573 | \$ 7,102,299 | \$ 8,038,405 | \$ 9,164,703 | \$ 9,777,004 | \$ 8,443,261 |
| 5. MVA Funded Ratio [ 4. / 1. ] | 108.4%       | 107.5%       | 101.1%       | 97.4%        | 108.2%       | 95.1%        | 105.4%       | 107.0%       | 115.2%       | 89.0%        |

\*Actuarial Value of Assets are estimated amounts for odd year-end Measurement Dates.

**EMPLOYER REPORTING AMOUNTS**

The impact of experience gains or losses and assumption changes on the TPL are recognized in the pension expense over the average expected remaining service life of all active and inactive members of the Plan, as provided below. The impact of investment gains or losses are recognized in the pension expense over a period of five years. The impact of plan changes is recognized immediately.

| <b>Schedule of Deferred Inflows and Outflows*</b>   |                                      |                                       |
|---|--------------------------------------|---------------------------------------|
|   | <b>Deferred Inflows of Resources</b> | <b>Deferred Outflows of Resources</b> |
| Differences between expected and actual experience  | \$ 0                                 | \$ 713,304                            |
| Changes in assumptions  | 0                                    | 76,243                                |
| Net difference between projected and actual earnings on pension plan investments  | 0                                    | 168,645                               |
| <b>Total</b>  | <b>\$ 0</b>                          | <b>\$ 958,192</b>                     |
| Amounts reported as deferred outflows and deferred inflows of resources will be recognized in pension expense as follows: |                                      |                                       |
| <b>Year ended December 31:</b>  |                                      |                                       |
| 2023  |                                      | 161,178                               |
| 2024  |                                      | 166,356                               |
| 2025  |                                      | 344,109                               |
| 2026  |                                      | 286,549                               |
| 2027  |                                      | 0                                     |
| Thereafter  | \$                                   | 0                                     |
| The recognition period for experience gains/losses and assumption changes is 4 years.                                     |                                      |                                       |

\*See Appendix C for more details on the deferred inflows and outflows.

**EMPLOYER REPORTING AMOUNTS**

The annual pension expense recognized can be calculated two different ways. First, it is the change in the amounts reported for the Employer's Statement of Net Position that relate to the plan and are not attributable to employer contributions. That is, it is the change in NPL plus the changes in deferred outflows and deferred inflows plus employer contributions.

Alternatively, annual pension expense can be calculated by its individual components. While GASB does not require or suggest the organization of the individual components shown in the table below, we believe it helps to understand the level and volatility of pension expense, as outlined below.

| <b>Calculation of Pension Expense</b>      |                               |                     |
|--|-------------------------------|---------------------|
|  | <b>Measurement Date as of</b> |                     |
|  | <b>12/31/2022</b>             | <b>12/31/2021</b>   |
| Change in Net Pension Liability            | \$ 2,330,367                  | \$ (687,545)        |
| Change in Deferred Outflows                | (637,059)                     | 187,938             |
| Change in Deferred Inflows                 | (1,323,994)                   | 253,627             |
| Employer Contributions                     | 123,545                       | 115,183             |
| <b>Pension Expense</b>                     | <b>\$ 492,859</b>             | <b>\$ (130,797)</b> |
| <b>Pension Expense as % of Payroll</b>     | <b>43.75%</b>                 | <b>-11.80%</b>      |
| <b>Operating Expenses</b>                  |                               |                     |
| Service cost                               | \$ 192,668                    | \$ 189,536          |
| Employee contributions                     | (56,320)                      | (55,405)            |
| PMRS administrative expense                | 520                           | 500                 |
| Additional administrative expense          | 22,192                        | 23,286              |
| Total                                      | \$ 159,060                    | \$ 157,917          |
| <b>Financing Expenses</b>                  |                               |                     |
| Interest cost                              | \$ 443,474                    | \$ 441,352          |
| Expected return on assets                  | (420,007)                     | (411,131)           |
| Total                                      | \$ 23,467                     | \$ 30,221           |
| <b>Changes</b>                             |                               |                     |
| Change of benefits                         | \$ 0                          | \$ 0                |
| Recognition of assumption changes          | 76,242                        | 76,242              |
| Recognition of liability gains and losses  | 293,984                       | 111,696             |
| Recognition of investment gains and losses | (59,894)                      | (506,873)           |
| Total                                      | \$ 310,332                    | \$ (318,935)        |
| <b>Pension Expense</b>                     | <b>\$ 492,859</b>             | <b>\$ (130,797)</b> |

## APPENDIX A

### DATA, PLAN PROVISIONS AND RISK DISCLOSURE

#### Data

The participant data used in this report was provided by PMRS and is effective on January 1, 2023. For a summary of the data of the Plan please refer to the 2023 Act 205 filing.

All data was provided by PMRS and reviewed for reasonability, but not audited, by Cheiron.

#### Plan Provisions

For a summary of the key provisions of the Plan please refer to the 2023 Act 205 filing.

#### Risk Disclosure

Actuarial valuation reports for pension plans must include a risk section to comply with the requirements under the Actuarial Standards of Practice No. 51. This actuarial standard addresses the “Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions”. A discussion of the risks associated with plans participating in PMRS can be found in the January 1, 2022 Pennsylvania Municipal Retirement System Actuarial Valuation Report, available at <https://www.pmps.pa.gov/financial-reports/>.

APPENDIX B

RECONCILIATION OF DEFERRED INFLOWS AND OUTFLOWS

|   | Deferred (Inflows)                                 |                        |  |                | Deferred Outflows                                  |                        |  |                |
|---|--|------------------------|--|----------------|--|------------------------|--|----------------|
|   | Differences between expected and actual experience | Changes in assumptions | Net difference between projected and actual earnings on pension plan investments | Total          | Differences between expected and actual experience | Changes in assumptions | Net difference between projected and actual earnings on pension plan investments | Total          |
| 12/31/2021                              | \$ 0   | \$ 0                   | \$ (1,323,994)   | \$ (1,323,994) | \$ 168,648   | \$ 152,485             | \$ 0   | \$ 321,133     |
| Adjustments due to investment earnings* | \$ 0   | \$ 0                   | \$ 1,323,994   | \$ 1,323,994   | \$ 0   | \$ 0                   | \$ (1,323,994)   | \$ (1,323,994) |
| 2022 deferred amounts                   | 0  | 0                      | 0  | 0              | 838,640  | 0                      | 1,432,745  | 2,271,385      |
| Recognition amounts                     | 0  | 0                      | 0  | 0              | (293,984)  | (76,242)               | 59,894   | (310,332)      |
| Net changes                             | \$ 0   | \$ 0                   | \$ 1,323,994   | \$ 1,323,994   | \$ 544,656   | \$ (76,242)            | \$ 168,645   | \$ 637,059     |
| 12/31/2022                              | \$ 0   | \$ 0                   | \$ 0   | \$ 0           | \$ 713,304   | \$ 76,243              | \$ 168,645   | \$ 958,192     |

\*This represents the adjustment due to aggregation of deferred amounts arising from differences between projected and actual pension plan investment earnings per paragraph 33b in GASB 68.

APPENDIX C

FURTHER INFORMATION REGARDING DEFERRED INFLOWS AND OUTFLOWS

Detailed Schedule of Collective Inflows and Outflows of Resources

Recognition of differences between expected and actual experience

| From Measurement Year Ending | Remaining Recognition Period | Remaining (Inflows) and Outflows | Recognition Year |            |            |            |      |      |            |
|------------------------------|------------------------------|----------------------------------|------------------|------------|------------|------------|------|------|------------|
|                              |                              |                                  | 2022             | 2023       | 2024       | 2025       | 2026 | 2027 | Thereafter |
| 2022                         | 4                            | \$ 838,640                       | \$ 209,660       | \$ 209,660 | \$ 209,660 | \$ 209,660 | \$ 0 | \$ 0 | \$ 0       |
| 2021                         | 3                            | 0                                | 0                | 0          | 0          | 0          | 0    | 0    | 0          |
| 2020                         | 2                            | 168,648                          | 84,324           | 84,324     | 0          | 0          | 0    | 0    | 0          |
| 2019                         | 1                            | 0                                | 0                | 0          | 0          | 0          | 0    | 0    | 0          |
| 2018                         | 0                            | 0                                | 0                | 0          | 0          | 0          | 0    | 0    | 0          |
| 2017                         | 0                            | 0                                | 0                | 0          | 0          | 0          | 0    | 0    | 0          |
| 2016                         | 0                            | 0                                | 0                | 0          | 0          | 0          | 0    | 0    | 0          |
| 2015                         | 0                            | 0                                | 0                | 0          | 0          | 0          | 0    | 0    | 0          |
| 2014                         | 0                            | 0                                | 0                | 0          | 0          | 0          | 0    | 0    | 0          |
| Deferred (Inflows)           |                              | 0                                | 0                | 0          | 0          | 0          | 0    | 0    | 0          |
| Deferred Outflows            |                              | 1,007,288                        | 293,984          | 293,984    | 209,660    | 209,660    | 0    | 0    | 0          |
| Total                        |                              | \$ 1,007,288                     | \$ 293,984       | \$ 293,984 | \$ 209,660 | \$ 209,660 | \$ 0 | \$ 0 | \$ 0       |

Recognition of changes in assumptions

| From Measurement Year Ending | Remaining Recognition Period | Remaining (Inflows) and Outflows | Recognition Year |           |      |      |      |      |            |
|------------------------------|------------------------------|----------------------------------|------------------|-----------|------|------|------|------|------------|
|                              |                              |                                  | 2022             | 2023      | 2024 | 2025 | 2026 | 2027 | Thereafter |
| 2022                         | 4                            | \$ 0                             | \$ 0             | \$ 0      | \$ 0 | \$ 0 | \$ 0 | \$ 0 | \$ 0       |
| 2021                         | 3                            | 0                                | 0                | 0         | 0    | 0    | 0    | 0    | 0          |
| 2020                         | 2                            | 152,485                          | 76,242           | 76,243    | 0    | 0    | 0    | 0    | 0          |
| 2019                         | 1                            | 0                                | 0                | 0         | 0    | 0    | 0    | 0    | 0          |
| 2018                         | 0                            | 0                                | 0                | 0         | 0    | 0    | 0    | 0    | 0          |
| 2017                         | 0                            | 0                                | 0                | 0         | 0    | 0    | 0    | 0    | 0          |
| 2016                         | 0                            | 0                                | 0                | 0         | 0    | 0    | 0    | 0    | 0          |
| 2015                         | 0                            | 0                                | 0                | 0         | 0    | 0    | 0    | 0    | 0          |
| 2014                         | 0                            | 0                                | 0                | 0         | 0    | 0    | 0    | 0    | 0          |
| Deferred (Inflows)           |                              | 0                                | 0                | 0         | 0    | 0    | 0    | 0    | 0          |
| Deferred Outflows            |                              | 152,485                          | 76,242           | 76,243    | 0    | 0    | 0    | 0    | 0          |
| Total                        |                              | \$ 152,485                       | \$ 76,242        | \$ 76,243 | \$ 0 | \$ 0 | \$ 0 | \$ 0 | \$ 0       |

APPENDIX C

FURTHER INFORMATION REGARDING DEFERRED INFLOWS AND OUTFLOWS

Detailed Schedule of Collective Inflows and Outflows of Resources

Recognition of net difference between projected and actual earnings on pension plan investments

| From<br>Measurement<br>Year Ending | Remaining<br>Recognition<br>Period | Remaining<br>(Inflows)<br>and Outflows | Recognition Year  |                   |                   |                   |                   |             |             |
|------------------------------------|------------------------------------|--|-------------------|-------------------|-------------------|-------------------|-------------------|-------------|-------------|
|                                    |                                    |  | 2022              | 2023              | 2024              | 2025              | 2026              | 2027        | Thereafter  |
| 2022                               | 5                                  | \$ 1,432,745                           | \$ 286,549        | \$ 286,549        | \$ 286,549        | \$ 286,549        | \$ 286,549        | \$ 0        | \$ 0        |
| 2021                               | 4                                  | (608,400)                              | (152,100)         | (152,100)         | (152,100)         | (152,100)         | 0                 | 0           | 0           |
| 2020                               | 3                                  | (533,257)                              | (177,752)         | (177,752)         | (177,753)         | 0                 | 0                 | 0           | 0           |
| 2019                               | 2                                  | (331,492)                              | (165,746)         | (165,746)         | 0                 | 0                 | 0                 | 0           | 0           |
| 2018                               | 1                                  | 149,155                                | 149,155           | 0                 | 0                 | 0                 | 0                 | 0           | 0           |
| Deferred (Inflows)                 |                                    | (1,473,149)                            | (495,598)         | (495,598)         | (329,853)         | (152,100)         | 0                 | 0           | 0           |
| Deferred Outflows                  |                                    | 1,581,900                              | 435,704           | 286,549           | 286,549           | 286,549           | 286,549           | 0           | 0           |
| Total                              |                                    | \$ 108,751                             | \$ (59,894)       | \$ (209,049)      | \$ (43,304)       | \$ 134,449        | \$ 286,549        | \$ 0        | \$ 0        |
| <b>Grand Total</b>                 |                                    | <b>\$ 1,268,524</b>                    | <b>\$ 310,332</b> | <b>\$ 161,178</b> | <b>\$ 166,356</b> | <b>\$ 344,109</b> | <b>\$ 286,549</b> | <b>\$ 0</b> | <b>\$ 0</b> |

**PENNRIDGE REGIONAL POLICE DEPT - 09-910-7 P.0238  
GASB 68 MEASUREMENT DATE OF DECEMBER 31, 2022**

**APPENDIX D**

**MARKET VALUE OF ASSETS RECONCILIATION**

|   | Member/ Municipal |              | Allocated Retiree |                    | Undistributed  |             |             |
|---|-------------------|--------------|-------------------|--------------------|----------------|-------------|-------------|
|   | Reserve           | DROP Reserve | Reserve           | Disability Reserve | Earnings       |             | Total       |
| Reported 12/31/2021 GASB 68 MVA                     | \$ 2,449,253      | \$ 3,750     | \$ 5,640,957      | \$ 804             | \$ 1,682,240   | \$          | 9,777,004   |
| Adjustments*  | 0                 | 0            | 0                 | 0                  | 0              | 0           | 0           |
| 1/1/2022 GASB 68 MVA                                | \$ 2,449,253      | \$ 3,750     | \$ 5,640,957      | \$ 804             | \$ 1,682,240   | \$          | 9,777,004   |
| Changes of assumptions                              | \$ 0              | \$ 0         | \$ 0              | \$ 0               | \$ 0           | \$          | 0           |
| Transfers   | (1,831,611)       | 46,671       | 1,784,939         | 0                  | 0              | 0           | 0           |
| Contributions - employer                            | 121,334           | 0            | 0                 | 1,691              | 0              | 123,025     | 123,025     |
| Contributions - PMRS assessment                     | 0                 | 0            | 0                 | 0                  | 520            | 520         | 520         |
| Contributions - employee                            | 56,320            | 0            | 0                 | 0                  | 0              | 56,320      | 56,320      |
| Excess Interest Award                               | 0                 | 0            | 0                 | 0                  | 0              | 0           | 0           |
| PMRS investment income                              | 53,188            | 397          | 366,290           | 131                | 0              | 420,007     | 420,007     |
| Market value investment income                      | 0                 | 0            | 0                 | 0                  | (1,649,242)    | (1,649,242) | (1,649,242) |
| Benefit payments                                    | 0                 | 0            | (478,158)         | 0                  | 0              | (478,158)   | (478,158)   |
| PMRS administrative expense                         | 0                 | 0            | 0                 | 0                  | (520)          | (520)       | (520)       |
| Additional administrative expense                   | 0                 | 0            | 0                 | 0                  | (22,192)       | (22,192)    | (22,192)    |
| Net changes   | \$ (1,600,769)    | \$ 47,069    | \$ 1,673,072      | \$ 1,822           | \$ (1,671,434) | \$          | (1,550,240) |
| Preliminary 12/31/2022 GASB 68 MVA                  | \$ 848,485        | \$ 50,819    | \$ 7,314,029      | \$ 2,626           | \$ 10,806      | \$          | 8,226,764   |
| Differences between expected and actual experience* | 0                 | 0            | 234,248           | 1,069              | (18,819)       | 216,497     | 216,497     |
| Final 12/31/2022 GASB 68 MVA                        | \$ 848,485        | \$ 50,819    | \$ 7,548,276      | \$ 3,695           | \$ (8,013)     | \$          | 8,443,261   |

\*For an explanation of the adjustments and differences between expected and actual experience, please refer to Appendix E.

The Allocated Retiree Reserve is based on the Retiree Liability as of the applicable Measurement Date. Employer contributions may be net of the PMRS administrative expense assessment, which is then offset by the “Contributions – PMRS assessment” in the Undistributed Earnings.

Amounts may not add due to rounding.

## APPENDIX E

### ACTUARIAL ASSUMPTIONS AND METHODS

The Pennsylvania Municipal Retirement System maintains the following funds:

- Members' Reserve Account
- Municipal Reserve Account
- DROP Participants' Reserve Account, when applicable
- Retired Members' Reserve Account
- Disability Reserve Account, when applicable
- Undistributed Earnings Account

The separate accounts are maintained for each member/plan within the Members' Reserve Account, the Municipal Reserve Account, and the DROP Participants' Reserve Account. The Market Value of Assets Reconciliation shows these reserves directly.

Separate accounts are not maintained within the Retired Members' Reserve Account, the Disability Reserve Account, and the Undistributed Earnings Account. These accounts are allocated to individual plans for GASB No. 68 purposes based on the methodology described below.

The Market Value of Assets within this GASB report reflects accounting requirements on a stand-alone basis and may differ from the Market Value of Assets reported on the Act 205 Form, which historically reflected reserves for an on-going PMRS plan without adjusting for the Retired Members' Reserve Account, the Disability Reserve Account, and the Undistributed Earnings Account.

Per Pennsylvania Municipal Retirement Law (PMRL) and the Board policies, the Actuarial Value of Assets equals the Municipal, Members' and DROP Participants' Reserve Accounts plus the Retiree Liability within the applicable corridor as outlined in Act 205.

The excess interest award is a transfer from the Undistributed Earnings Account to the Municipal, Members', and/or Retired Members' Reserve accounts and does not impact the Market Value of Assets. An excess interest award as of December 31, 2018 increased the Actuarial Value of Assets for the plan which is used for determination of the MMO as reported on the Act 205. There has been no subsequent excess interest awarded.

#### **1. Retired Members' Reserve Account**

The Retired Members' Reserve is allocated proportionally based on the retiree liability determined as of the Valuation Date corresponding to the Measurement Date, as shown on page 1 of this report. The retiree liability is rolled forward from the Valuation Date (where applicable) to reflect actual benefit payments and new retirements along with any material changes, such as plan or assumption changes, that are effective on or before the applicable Measurement Date.

## APPENDIX E

### ACTUARIAL ASSUMPTIONS AND METHODS

In alternating years, retiree experience (gains)/losses are developed for each individual plan and for the System as a whole. These experience (gains)/losses are shown as differences between expected and actual experience. The amount under Allocated Retiree Reserve represents the individual plan's retiree experience (gain)/loss and the individual plan's share of the collective System retiree experience gain/(loss). For example, the experience gains/(losses) for the Allocated Retiree Reserve might represent the apportionment to the individual plans of the remaining assets when a retiree dies.

#### 2. Disability Reserve Account

The Disability Reserve is allocated proportionally based on combined employer contributions and surplus transfers to the Disability Reserve in the year preceding the Measurement Date, excluding any amounts for plans that withdrew prior to the Measurement Date.

The amount shown as differences between expected and actual experience represent disability insurance premiums when negative and payouts in the event of a disability when positive.

#### 3. Undistributed Earnings Account

The Undistributed Earnings Account is allocated proportionally based on the value of the reserve accounts as of the Measurement Date.

The amount shown as differences between expected and actual experience reflects the change in the size of the individual plan's reserves relative to the collective System's reserves. When applicable, the excess interest award is a transfer from the Undistributed Earnings Account to the Municipal, Members' and/or Retired Members' Reserve Accounts. The net impact of this allocation on the Market Value of Assets is zero.

#### 4. Historical changes in the assets

- A. 2020 Retired Members' Reserve Transfer: As of January 1, 2021, the Retired Members' Reserve Account was increased in total by \$67.8 million to ensure it was fully funded. This increase was offset by a decrease in the Undistributed Earnings Account.
- B. 2019 Retired Members' Reserve Transfer: As of January 1, 2020, the Retired Members' Reserve Account was increased in total by \$6.5 million to ensure it was fully funded. This increase was offset by a decrease in the Undistributed Earnings Account.
- C. 2018 Excess Interest Award Distribution: The excess interest award is a transfer from the Undistributed Earnings Account to the Municipal, Members', and/or Retired Members' Reserve Accounts and does not impact the Market Value of Assets. During 2018, this excess interest award as of December 31, 2018 increased the Actuarial Value of Assets for the Plan. The Actuarial Value of Assets is used for determination of the MMO as reported on the Act 205.
- D. 2017 Retired Members' Reserve Transfer: As of December 31, 2017, the Retired Members' Reserve Account was increased in total by \$45 million and restated in the December 31, 2018 PMRS ACFR. This increase was offset by a decrease in the Undistributed Earnings Account.

## APPENDIX E

### ACTUARIAL ASSUMPTIONS AND METHODS

#### Actuarial Assumptions:

The actuarial assumptions used in this report are as follows.

#### A. Mortality:

##### 1) Healthy Life Mortality Base Tables:

###### Pre-Retirement

Males: PUB-2010 General Employees male table

Females: PUB-2010 General Employees female table

Type of Death:

- (a) 20% of pre-retirement deaths are assumed to be service related for municipal plans, and
- (b) 70% of pre-retirement deaths are assumed to be service related for uniform plans.

###### Post-Retirement

Males: RP-2006 annuitant male table

Females: RP-2006 annuitant female table

##### 2) Disabled Life Mortality Base Tables:

Males: RP-2006 disabled annuitant male table

Females: RP-2006 disabled annuitant female table

##### 3) Mortality Improvement

All base mortality tables described above are projected from the applicable table's base year to 2023 using Mortality Improvement Scale MP-2018.

The mortality assumption, inclusive of the projected mortality improvements described above, was selected as a reasonable representation of the ultimate projected payout of benefits from the Plan using nationally available mortality tables as well as data provided by PMRS.

**APPENDIX E**

**ACTUARIAL ASSUMPTIONS AND METHODS**

**B. Termination Rates Before Retirement:**

| Municipal Members<br>Number of Active Members in Plan |       |       |
|---|-------|-------|
| Service   | <25   | 25+   |
| <=1   | 11.0% | 12.0% |
| 2   | 10.0% | 11.0% |
| 3   | 9.0%  | 10.0% |
| 4   | 8.0%  | 9.0%  |
| 5   | 7.0%  | 7.5%  |
| 6   | 8.0%  | 7.5%  |
| 7   | 6.0%  | 7.0%  |
| 8   | 5.0%  | 6.0%  |
| 9   | 4.0%  | 5.0%  |
| 10+   | 3.0%  | 3.5%  |

| Uniformed Members<br>Termination Rate |                  |
|---------------------------------------|------------------|
| Service                               | Termination Rate |
| <=4                                   | 10.0%            |
| 5                                     | 5.0%             |
| 6-8                                   | 4.0%             |
| 9+                                    | 3.0%             |

**C. Disability Incidence Rates:**

50% of 2017 CALPERS Public Miscellaneous Group disability rates for males. Sample rates are:

| Age | Rate    |
|-----|---------|
| 25  | 0.0085% |
| 35  | 0.0245% |
| 45  | 0.0955% |
| 55  | 0.1105% |
| 65  | 0.1050% |

Type of Disability:

- (a) 20% of disablements are assumed to be service related for municipal plans, and
- (b) 70% of disablements are assumed to be service related for uniform plans.

**D. Workers Compensation:** Service-related disability benefits payable from municipal plans are offset by 25% of final average salary.

**APPENDIX E**

**ACTUARIAL ASSUMPTIONS AND METHODS**

**E. Salary Scale:**

Inflation rate of 2.2% plus merit based increases, as shown below for select ages:

| Age | Total Rate <sup>1</sup><br>(including inflation) |
|-----|--|
| 25  | 6.22%  |
| 30  | 5.16%  |
| 35  | 4.49%  |
| 40  | 4.14%  |
| 45  | 3.82%  |
| 50  | 3.55%  |
| 55  | 3.28%  |
| 60  | 3.11%  |
| 65  | 2.79%  |

<sup>1</sup>Add 3% for each of the first 2 years of service, 2% for years 3 and 4, and 1% for years 5 and 6

For 2021 and 2022, merit based increases are assumed to be 0%.

**F. Rates of Retirement and Retirement Age:**

**Retirement Age:** The age at which unreduced benefits are available. No early retirement is assumed. Specific assumptions regarding retirement age are:

(a) Municipal Members:

Members are assumed to retire over a range of ages as shown below.

| Age     | Rate <sup>1</sup> | Age     | Rate <sup>1</sup> |
|---------|-------------------|---------|-------------------|
| <55     | 33%               | 63      | 18%               |
| 55      | 30%               | 64      | 15%               |
| 56 – 57 | 12%               | 65 – 67 | 25%               |
| 58 – 59 | 14%               | 68 – 70 | 20%               |
| 60      | 18%               | 71 – 73 | 22%               |
| 61      | 10%               | 74      | 20%               |
| 62      | 20%               | 75      | 100%              |

<sup>1</sup>Rates indicated are adjusted by adding 10% for ages 61-63 and 5% for ages 64-70 for the year in which the member is first eligible for normal retirement.

**APPENDIX E**

**ACTUARIAL ASSUMPTIONS AND METHODS**

(b) Uniformed Members:

Members are assumed to retire over a range of ages as shown below.

| Age     | Rate | Age | Rate |
|---------|------|-----|------|
| <49     | 0%   | 62  | 28%  |
| 50      | 25%  | 63  | 22%  |
| 51 – 53 | 10%  | 64  | 25%  |
| 54 – 55 | 15%  | 65  | 35%  |
| 56 – 58 | 17%  | 66  | 30%  |
| 59 – 60 | 15%  | 67+ | 100% |
| 61      | 20%  |     |      |

For any members participating in a Deferred Retirement Option Program (DROP), the participant’s date of entry into the DROP is considered the retirement date.

**G. DROP (Deferred Retirement Option Plan) or In-Service Distribution Plan:**

For plans with these options, at Participant’s Normal Retirement Age, retirement rate multiplied by the following factors:

- (a) Uniform: 130%
- (b) Non-uniform: 115%

**H. Marital Status and Spouse’s Age (if applicable):**

For plans with the 50% J&S form of payment, 85%/65% of active male/female members are assumed to be married. Male spouses are assumed to be three years older than female spouses.

**I. Social Security Projections (if applicable):**

- (a) The Social Security Taxable Wage Base will increase by 2.7% compounded annually;
- (b) The Consumer Price Index will increase 2.2% compounded annually; and
- (c) The Average Total Wages of All Workers will increase by 2.7% compounded annually.

**J. Post-Retirement Cost of Living Increases (if applicable)/Inflation:**

2.2% per year, subject to plan limitations.

## APPENDIX E

### ACTUARIAL ASSUMPTIONS AND METHODS

#### **K. Investment Return Assumption for municipal assets:**

5.25% compounded annually, net of investment and certain administration expenses. For detailed description and rationale, please refer to the file titled “2022 Long-Term Expected Rate of Return on Plan Assets” located under the 2022 GASB Reports section of the PMRS website (<https://www.pMrs.pa.gov/employers/financial-reporting-information/governmental-accounting-standards-board-gasb/>).

#### **L. Administrative Expenses:**

The expense assumption is based on the expected expenses for the current year. The administrative expenses consist of two pieces: (1) the PMRS administrative expenses (i.e., the \$20 per participant charge paid directly by the municipality) and (2) the additional administrative expenses in excess of the PMRS administrative expense that are paid through the Undistributed Earnings.

#### **M. Rationale for Assumptions:**

An experience study is completed every five years for the System. The assumptions above were reviewed and adopted by the Board based on the most recent experience study for the period covering January 1, 2014 – December 31, 2018. The assumption changes from this experience study were first reflected as of the December 31, 2020 Measurement Date.

#### **Actuarial Cost Method:**

Entry Age Normal Actuarial Cost Method.

Entry Age is defined as attained age less credited service. The normal cost rate is derived as a level percent of future compensation of current employees, on an individual basis. This rate is applied to the projected payroll and projected employee contributions are deducted. Actuarial gains (or losses), including the effect of contributions greater or lesser than the previously determined actuarial level, are reflected by decreases (or increases) in the unfunded actuarial liability. The portion of the actuarial present value of the projected benefits offset by the actuarial present value of future service costs is called the Total Pension Liability.

## APPENDIX E

### ACTUARIAL ASSUMPTIONS AND METHODS

#### **Historical Changes in Assumptions:**

12/31/2020: Assumptions based on the PMRS Experience Study for the period covering January 1, 2014 through December 31, 2018 issued by the actuary in September 2020.

12/31/2016: Investment Return Assumption for municipal assets decreased from 5.50% to 5.25%.

12/31/2015: Assumptions based on the PMRS Experience Study for the period covering January 1, 2009 through December 31, 2013 issued by the actuary in July 2015.

#### **Valuation Software:**

Cheiron utilizes ProVal, an actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal and have used it in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this report.

**APPENDIX F**

**GLOSSARY OF TERMS**

**1. Actuarially Determined Contribution**

A target or recommended contribution for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

**2. Actuarial Valuation Date**

The date as of which an actuarial valuation is performed. This date may be up to 24 months prior to the measurement date and up to 30 months prior to the employer's Reporting Date.

**3. Agent Multiple Employer Pension Plan**

Pension plans in which the assets of the participating government employers are pooled for investment purposes but separate accounts are maintained for each individual employer.

**4. Deferred Inflow of Resources**

An acquisition of net assets by a government employer that is applicable to a future reporting period. In the context of GASB No. 68, these are experience gains on the Total Pension Liability, assumption changes reducing the Total Pension Liability, or investment gains that are recognized in future reporting periods.

**5. Deferred Outflow of Resources**

A consumption of net assets by a government employer that is applicable to a future reporting period. In the context of GASB No. 68, these are experience losses on the Total Pension Liability, assumption changes increasing the Total Pension Liability, or investment losses that are recognized in future reporting periods.

**6. Discount Rate**

Based on the Long-Term Expected Rate of Return, which PMRS develops and is also referred to as the Regular Interest Rate.

**7. Excess Interest**

As defined by the Pennsylvania Municipal Retirement Law (Act 15 of 1974), these are the investment earnings in the fund in excess of that required for allocation to regular interest and expenses. The Pennsylvania Municipal Retirement Board Policy Statement 05-2 (<https://www.pmrns.pa.gov/wp-content/uploads/2023/08/policy05-2-ExcInt.pdf>) describes how Excess Interest is calculated to award to the plans participating in PMRS.

## APPENDIX F

### GLOSSARY OF TERMS

#### 8. Excess Interest Award

This is the amount of excess interest awarded by the Board of Trustees to plans participating in PMRS. If the plan is 95% or more funded as of the plan's most recent Act 205/Act 293 filing with the State, then the excess interest award increases pension benefits for participants in the plan and/or increases the municipal account for the plan. The exact terms of these increases are based on individual contracts each plan has with PMRS. If the plan is less than 95% funded, then the excess interest award increases the municipal account for the plan. Allocation of Excess Interest to Municipal, Members', and Retired Members' Reserve Accounts is described in Pennsylvania Municipal Retirement Board Policy Statement Rule Number 97-1 (<https://www.pmrns.pa.gov/wp-content/uploads/2023/08/allocofexcinterest.pdf>).

#### 9. Measurement Date

The date as of which the Total Pension Liability and Plan Fiduciary Net Position are measured. The Total Pension Liability may be rolled forward from the Actuarial Valuation Date to the Measurement Date. The Current Measurement Date within this report is December 31, 2022.

#### 10. Measurement Period

The period between the Prior and the Current Measurement Dates.

#### 11. Minimum Municipal Obligation (MMO)

The minimum employer contribution required to be paid to the pension fund annually, as statutorily defined.

#### 12. Net Pension Liability

The liability of employers and nonemployer contributing entities for employees for benefits provided through a defined benefit pension plan. It is calculated as the Total Pension Liability less the Plan Fiduciary Net Position. The Net Pension Liability is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling a Plan's benefit obligation in the event of a plan termination or other similar action.

#### 13. Plan Fiduciary Net Position

The fair or market value of assets based on the municipal and member accounts for each pension plan and an allocated portion of the Retired Members' Reserve Account, the Disability Reserve Account, and the Undistributed Earnings Account.

#### 14. Regular Interest Rate

As defined by the Pennsylvania Municipal Retirement Law (Act 15 of 1974), this is the rate fixed and annually reviewed by the board on the basis of earnings on investments to be applied to the Municipal and Members' Reserve Accounts including the Retired Members' Reserve account and the Disability Reserve Account.

**APPENDIX F**

**GLOSSARY OF TERMS**

**15. Reporting Date**

The last day of the employer's fiscal year that ends no later than 12 months after the measurement date.

**16. Service Cost**

The portion of the actuarial present value of projected benefit payments that is attributed to the current period of employee service in conformity with the requirements of GASB No. 68. The Service Cost is determined based on the Actuarial Cost Method described in Appendix E.

**17. Total Pension Liability**

The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of GASB No. 68. The Total Pension Liability is determined based on the Actuarial Cost Method described in Appendix E.

**APPENDIX G**

**ADDITIONAL INFORMATION**

The following PMRS Actuarial and Audit Reports are available under the “*Financial Reports*” section of the PMRS website (<https://www.pmps.pa.gov/financial-reports/>):

- PMRS Actuarial Valuation
- PMRS Annual Comprehensive Financial Report (ACFR)
- PMRS SSAE 18 (SOC 1 Type 2) Audit Report
- PMRS Schedule of Changes in Plan Fiduciary Net Position by Participating Municipality Report