

# West Virginia Consolidated Public Retirement Board



*Pension Trust Funds of the State of West Virginia*  
(A Component Unit of the State of West Virginia)



Annual Comprehensive  
Financial Report  
Fiscal Year Ended June 30, 2023



*Serving Those Who Serve West Virginia*



# West Virginia Consolidated Public Retirement Board

Pension Trust Funds of the State of West Virginia

## ANNUAL COMPREHENSIVE FINANCIAL REPORT

*For the Fiscal Year Ended June 30, 2023*

Prepared by:

Elizabeth J. Cooper, CPA  
Chief Financial Officer

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### **The West Virginia Consolidated Public Retirement Board Administers the Following Retirement Systems:**

Public Employees' Retirement System  
Teachers' Retirement System  
State Police Death, Disability, and Retirement System  
State Police Retirement System  
Deputy Sheriff Retirement System  
Judges' Retirement System  
Emergency Medical Services Retirement System  
Municipal Police Officers & Firefighters Retirement System  
Natural Resources Police Officers Retirement System  
Teachers' Defined Contribution Retirement System

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### **Contact Information:**

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# Introductory Section



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*For the Fiscal Year Ended June 30, 2023*

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- 9 Awards and Recognition

**Consolidated Public Retirement Board**  
***Pension Trust Funds of the State of West Virginia***





**EXECUTIVE DIRECTOR**  
Jeffrey E. Fleck

## Consolidated Public Retirement Board

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**BOARD CHAIRMAN**  
Joseph G. Bunn

December 18, 2023

To the Citizens of West Virginia and the West Virginia Consolidated Public Retirement Board Members:

It is with great pleasure that we submit our Annual Comprehensive Financial Report (CAFR) of the West Virginia Consolidated Public Retirement Board (WVCPRB) for the fiscal year ended June 30, 2023. This report provides detail information on the performance of the ten retirement systems (the Systems) administered by WVCPRB, including:

- Public Employees Retirement System (PERS)
- Teachers Retirement System (TRS)
- Teachers Defined Contribution Retirement System (TDCRS)
- State Police Death, Disability Retirement System (SPDDRS)
- State Police Retirement System (SPRS)
- Deputy Sheriffs Retirement System (DSRS)
- Judges Retirement System (JRS)
- Emergency Medical Service Retirement System (EMSRS)
- Municipal Police Officers & Firefighters Retirement System (MPFRS)
- Natural Resources Police Officers Retirement System (NRPORS)

Each system is considered a component unit of the State of West Virginia for financial reporting purposes, and, as such, the financial information contained in this report is also included in the State of West Virginia's Annual Comprehensive Financial Report. Responsibility for both the accuracy of the data, and the completeness and fairness of the presentation including all disclosures, rests with the management of the Systems. Sufficient internal controls exist to provide reasonable assurance regarding the safekeeping of assets and fair presentation of the financial statements, supporting schedules, and statistical tables. We trust that you and the respective members of the Systems will find this report helpful in understanding your retirement systems.

### **Administration and Plan History**

The PERS, TRS, TDCRS, SPDDRS, SPRS, DSRS, JRS, EMSRS, MPFRS, and NRPORS operate under common management and are collectively referred to as The West Virginia Consolidated Public Retirement Board. In addition to executive management, these plans share accounting and information services, the costs of which are allocated to the funds on an equitable basis. The plans were established under various provisions of the Legislature to provide benefits to qualified persons employed by State-supported institutions, entities, and components. Additional information regarding the administration and history of each system, including laws establishing the plan and services provided, can be found in the *Financial Section-Notes to the Financial Statements* portion of this report.

## Financial Information

*Accounting Method* - As required by Accounting Principles Generally Accepted in the United States of America (GAAP), the financial information of the PERS, TRS, TDCRS, SPDDRS, SPRS, DSRS, JRS, EMSRS, MPFRS, and NRPORS is reported on the accrual basis of accounting. Revenues are recognized when earned and expenses are recognized when the corresponding liability is incurred. Investments are reported at fair value.

*Internal Controls* - The WVCPRB maintains a system of internal controls designed to provide reasonable assurance that assets are properly safeguarded, transactions are properly executed, and financial statements are reliable. Because the cost of internal control should not exceed anticipated benefits, the objective is to provide reasonable, rather than absolute, assurance that the financial statements are free of any material misstatements.

*Summary Comparative Data* - Management's Discussion and Analysis (MD&A) includes a narrative introduction, an overview of the financial statements, including the notes and required supplementary information, and summary comparative data for fiscal years 2023 and 2022.

## Plan Funded Position

The funding objective of the WVCPRB pension trust funds is to meet long-term benefit requirements through contributions, which remain relatively level as a percent of member payroll over time, and through investment earnings. During the year ended June 30, 2023, the funded ratios for the retirement systems increased for 4 of the 9 defined benefit systems, while 5 of the systems experienced a decrease, and this measure was not applicable to the new system (based on actuarial valuations completed as of July 1, 2022). The funded ratios of the defined benefit systems, are as follows:

|        | July 1, 2022 | July 1, 2021 | Increase<br>(Decrease) |
|--------|--------------|--------------|------------------------|
| PERS   | 98.24%       | 97.53%       | 0.71%                  |
| TRS    | 78.43%       | 76.03%       | 2.40%                  |
| SPDDRS | 95.14%       | 106.09%      | -10.95%                |
| SPRS   | 86.40%       | 103.94%      | -17.54%                |
| DSRS   | 88.41%       | 87.52%       | 0.89%                  |
| JRS    | 239.48%      | 263.08%      | -23.60%                |
| EMSRS  | 102.72%      | 112.83%      | -10.11%                |
| MPFRS  | 140.05%      | 180.16%      | -40.11%                |
| NRPORS | 90.32%       | 89.78%       | 0.54%                  |

Historical information concerning funding progress is presented in the *actuarial section* for each system.

## Investment Activity

Total investments for the WVCPRB increased in fiscal year 2023, primarily due to both an increase in the fair value of the investments and the income they produced. The total investment assets at June 30, 2023 and 2022 were (in thousands):

|        | June 30, 2023 | June 30, 2022 | Increase<br>(Decrease) |
|--------|---------------|---------------|------------------------|
| PERS   | \$ 8,398,436  | \$ 8,004,836  | \$ 393,600             |
| TRS    | 9,319,702     | 8,980,422     | 339,280                |
| SPDDRS | 778,440       | 767,509       | 10,931                 |
| SPRS   | 320,096       | 289,417       | 30,679                 |
| DSRS   | 316,039       | 293,315       | 22,724                 |
| JRS    | 278,545       | 259,323       | 19,222                 |
| EMSRS  | 125,180       | 112,408       | 12,772                 |
| MPFRS  | 34,945        | 26,795        | 8,150                  |
| NRPORS | 27,642        | 24,467        | 3,175                  |
| TDCRS  | 663,300       | 603,837       | 59,463                 |
|        | \$ 20,262,325 | \$ 19,362,329 | \$ 899,996             |

## **Investment Activity (Continued)**

Interest and dividend income and the associated investment yields for fiscal years ended June 30, 2023 and 2022, were (dollars in thousands):

|        | Fiscal Year Ended June 30, 2023 |                             |        | Fiscal Year Ended June 30, 2022 |                             |         | Increase (Decrease)  |                             |        |
|--------|---------------------------------|-----------------------------|--------|---------------------------------|-----------------------------|---------|----------------------|-----------------------------|--------|
|        | Interest & Dividends            | Change in Fair Market Value | Yield  | Interest & Dividends            | Change in Fair Market Value | Yield   | Interest & Dividends | Change in Fair Market Value | Yield  |
| PERS   | \$ 672                          | \$ 669,885                  | 8.33%  | \$ 28                           | \$ (542,528)                | -6.25%  | \$ 644               | \$ 1,212,413                | 14.58% |
| TRS    | 1,166                           | 741,051                     | 8.25%  | 61                              | (600,605)                   | -6.20%  | 1,105                | 1,341,656                   | 14.45% |
| SPDDRS | 80                              | 63,030                      | 8.21%  | 8                               | (51,138)                    | -6.17%  | 72                   | 114,168                     | 14.38% |
| SPRS   | 20                              | 24,953                      | 8.62%  | 1                               | (19,816)                    | -6.50%  | 19                   | 44,769                      | 15.12% |
| DSRS   | 19                              | 24,945                      | 8.50%  | 1                               | (19,975)                    | -6.37%  | 18                   | 44,920                      | 14.87% |
| JRS    | 16                              | 22,047                      | 8.50%  | 1                               | (17,632)                    | -6.33%  | 15                   | 39,679                      | 14.83% |
| EMSRS  | 14                              | 9,632                       | 8.57%  | -                               | (7,672)                     | -6.43%  | 14                   | 17,304                      | 15.00% |
| MPFRS  | 14                              | 2,549                       | 9.51%  | 1                               | (1,831)                     | -7.03%  | 13                   | 4,380                       | 16.54% |
| NRPORS | 5                               | 2,133                       | 8.72%  | -                               | (1,661)                     | -6.51%  | 5                    | 3,794                       | 15.23% |
| TDCRS  | 49,285                          | 70,638                      | 11.70% | 30,489                          | (113,626)                   | -18.66% | 18,796               | 184,264                     | 30.36% |

Additional information concerning investments, including investment policies and procedures, is located in the investment section of this Annual Comprehensive Financial Report.

## **Management's Discussion and Analysis**

GASB Statement No. 34 requires that management provide a narrative introduction, overview, and analysis to accompany the Financial Statements in the form of Management's Discussion and Analysis (MD&A). This letter of transmittal is intended to complement the MD&A and should be read in conjunction with it. The MD&A can be found immediately following the Independent Auditor's Report.

## **Professional Services**

Professional consultants are engaged by the Board to perform certain professional services that are essential to the effective operation of the respective plans. The Certification letters from the independent actuary, in conjunction with our internal actuary, are included in this report. The professional consultants engaged by the Board are listed in the Introductory Section of this report.

## **Financial Statement Audit**

Eide Bailly, LLP, issued an unmodified ("clean") opinion on the West Virginia Consolidated Public Retirement Board's financial statements for the fiscal year ended June 30, 2022. The independent auditor's report is located at the front of the Financial Section of this report.

## **Highlights and Initiatives**

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the West Virginia Consolidated Public Retirement Board for its annual comprehensive financial report for the fiscal year ended June 30, 2022. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized annual comprehensive financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current annual comprehensive financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

## **Acknowledgments**

The compilation of this report reflects the combined effort of the staff of the West Virginia Consolidated Public Retirement Board under the leadership of its Executive Director and the Guidance of the Board Members. It is intended to provide extensive and reliable information as a basis for making management decisions, determining compliance with legal provisions, and determining responsible stewardship of the funds of the PERS, TRS, SPDDRS, SPRS, DSRS, JRS, EMSRS, MPFRS, NRPORS, and TDCRS.

We would like to take this opportunity to express our gratitude to the staff, the Governor, the Board of Trustees, the legislature, the consultants, and the many people who have worked so diligently through continued cooperative efforts to assure the successful operation and financial soundness of the PERS, TRS, SPDDRS, SPRS, DSRS, JRS, EMSRS, MPFRS, NRPORS, and TDCRS systems.

Sincerely,

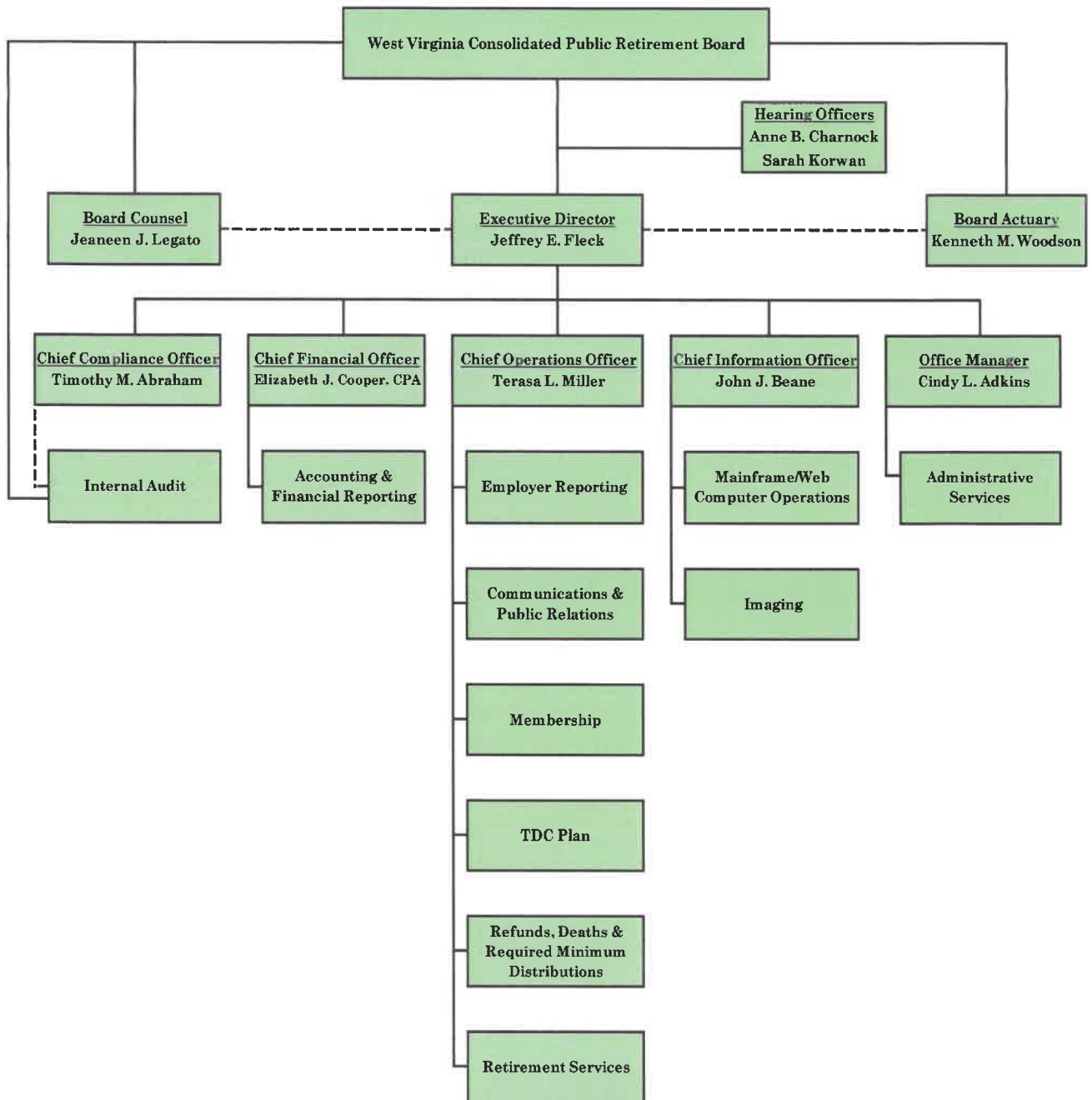


Jeffrey E. Fleck  
Executive Director



Elizabeth J. Cooper  
Chief Financial Officer

**West Virginia Consolidated Public Retirement Board**  
*Introductory Section*  
**Organization Chart**



# West Virginia Consolidated Public Retirement Board

## Introductory Section

### Board of Trustees, Administrative Staff, & Advisors

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#### Board of Trustees:

|                        |  |
|------------------------|--|
| Chair                  | Joseph G. Bunn, Esquire                          |
| Vice-Chair             | Michael McKown                                   |
| Statutory Board Member | Governor James C. Justice, III                   |
| Statutory Board Member | State Auditor John B. McCuskey                   |
| Statutory Board Member | State Treasurer Riley Moore                      |
| Statutory Board Member | Administration Cabinet Secretary – Mark D. Scott |
| Board Member           | William A. Barker, Jr.                           |
| Board Member           | Rhonda Bolyard                                   |
| Board Member           | Woodrow W. Brogan, III                           |
| Board Member           | Daniel Cart                                      |
| Board Member           | Larry W. Cole                                    |
| Board Member           | Michael Corsaro                                  |
| Board Member           | Brad Mankins                                     |
| Board Member           | Beth K. Morgan                                   |
| Board Member           | D. Todd Murray                                   |
| Board Member           | Dominique N. Ranieri                             |
| Board Member           | C. Jeffrey Vallet, CPA                           |

#### Administrative Staff:

|   |                          |
|---|--------------------------|
| Executive Director                      | Jeffrey E. Fleck         |
| Executive Assistant                     | Kimberly K. Pauley       |
| Chief Operating Officer/Deputy Director | Terasa L. Miller         |
| Chief Financial Officer                 | Elizabeth J. Cooper, CPA |
| Chief IT/Information Officer            | John J. Beane            |
| Contract Legal Counsel                  | J. Jeaneen Legato        |
| Administrative Services Manager         | Cindy L. Adkins          |
| Accounting Manager                      | Lori A. Cottrill         |
| Membership Manager                      | Vicki L. Sutton          |
| Retirement Services Manager             | Lisa M. Trump            |
| Employer Reporting Manager              | Caroline R. Brady        |
| TDCRS Manager                           | Paula M. Vanhorn         |
| Refunds/Deaths/RMDs Manager             | Sharon L. Whittaker      |
| Compliance Officer                      | Timothy M. Abraham       |

#### Advisors:

|  |   |
|--|---|
| External Legal Counsel                   | Bowles Rice, LLP                              |
| Consulting Actuary                       | Buck Global, LLC                              |
| Investment Manager                       | West Virginia Investment Management Board (1) |
| Independent Certified Public Accountants | Eide Bailly, LLP                              |

- (1) A schedule of investment fees and commissions by investment pool is presented in the Investment Section on pages 101, 104, 107, 111, and 114.



# West Virginia Consolidated Public Retirement Board

## *Introductory Section*

### *Awards and Recognition*

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#### **Certificate of Achievement for Excellence in Financial Reporting, Annual Comprehensive Financial Report (ACFR)**

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the West Virginia Consolidated Public Retirement (WVCPRB) for its Annual Comprehensive Financial Report (ACFR) for the fiscal year ended June 30, 2022. This was the 11th consecutive year that WVCPRB achieved this prestigious recognition.

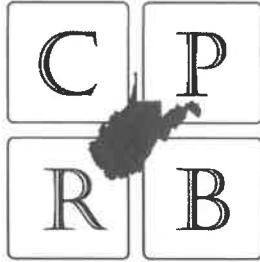
To be awarded the certificate, a government unit must publish an easily readable and efficiently organized comprehensive annual report. This report must satisfy both generally accepted accounting principles and applicable legal requirements. The certificate is valid for a period of one year.

The WVCPRB ACFR for fiscal year 2023 continues to conform to the Certificate of Achievement Program requirements and will be submitted to GFOA to determine its eligibility for another certificate.





# Financial Section



2023 ANNUAL COMPREHENSIVE FINANCIAL REPORT  
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## Independent Auditor's Report

To the Members of the  
West Virginia Consolidated Public Retirement Board  
Charleston, West Virginia

### Report on the Audit of the Financial Statements Opinion

We have audited the accompanying financial statements of the fiduciary activities of the West Virginia Consolidated Public Retirement Board (the Board), a component unit of the State of West Virginia, which comprise the statement of fiduciary net position as of the year ended June 30, 2023, and the related statement of changes in fiduciary net position, for the year then ended, and the related notes to the financial statements.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the respective financial position of the fiduciary activities of the Board, as of June 30, 2023, and the respective changes in financial position, for the year then ended in accordance with accounting principles generally accepted in the United States of America.

### ***Basis for Opinion***

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States (Government Auditing Standards). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Board and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### **Emphasis of Matters**

#### ***Reporting Entity***

As discussed in Note 1, the financial statements of the West Virginia Consolidated Public Retirement Board are intended to present the financial position and the changes in financial position of the Board. They do not purport to, and do not present fairly the financial position of the State of West Virginia, as of June 30, 2023, the changes in its financial position, and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally in the United States of America. Our opinion is not modified with respect to this matter.

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### ***Responsibilities of Management for the Financial Statements***

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America; and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Board's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

### ***Auditor's Responsibilities for the Audit of the Financial Statements***

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and *Government Auditing Standards* will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS and *Government Auditing Standards*, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Board's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Board's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control–related matters that we identified during the audit.

## **Required Supplementary Information**

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis, the Schedules of Net Pension Liability and Changes in Net Pension Liability, Schedule of Contributions, Schedules of Investment Returns and respective notes to the required supplementary information as listed in the table of contents be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

## **Supplementary Information**

Our audit was conducted for the purpose of forming opinion on the financial statements that collectively comprise the Board's basic financial statements. The supplementary information as listed in the table of contents are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplementary information listed are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

## **Other Information**

Management is responsible for the other information included in the annual report. The other information comprises the introductory, investment, actuarial, and statistical sections but does not include the basic financial statements and our auditor's report thereon. Our opinion on the basic financial statements do not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

*Eide Bailly LLP*

Boise, Idaho

October 12, 2023



**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Management's Discussion and Analysis**

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This section presents management's discussion and analysis of the West Virginia Consolidated Public Retirement Board's (WV CPRB) financial status and performance for the year ended June 30, 2023.

WV CPRB is responsible for administering retirement benefits for nine defined benefit pension systems and one defined contribution system. These retirement systems are:

***Defined Benefit Systems:***

- Public Employees Retirement System (PERS)
- Teachers' Retirement System (TRS)
- State Police Death, Disability and Retirement System (SPDDRS)
- State Police Retirement System (SPRS)
- Deputy Sheriff Retirement System (DSRS)
- Judges' Retirement System (JRS)
- Emergency Medical Service Retirement System (EMSRS)
- Municipal Police Officers & Firefighters Retirement System (MPFRS)
- Natural Resources Police Officers Retirement System (NRPORS)

***Defined Contribution System:***

- Teachers' Defined Contribution Retirement System (TDCRS)

**OVERVIEW OF THE FINANCIAL STATEMENTS**

This discussion and analysis is intended to serve as an introduction to the WV CPRB's financial reporting, which is comprised of the following components:

1. Financial Statements, including Notes to the Financial Statements
2. Required Supplementary Information

Collectively, this information presents the net position held in trust for pension benefits for each of the systems administered by WV CPRB as of June 30, 2023. This financial information also summarizes the changes in net position held in trust for pension and defined contribution benefits for the year then ended. The information in each of these components is briefly summarized as follows:

1. **Financial Statements.** For the fiscal year ended June 30, 2023, financial statements are presented for the retirement systems administered by WV CPRB. Fiduciary funds are used to account for resources held for the benefit of parties outside WV CPRB. These fiduciary funds are comprised of nine defined benefit retirement systems and one defined contribution retirement system.
  - The Statement of Fiduciary Net Position – Pension Funds is presented for the pension funds at June 30, 2023. This financial statement reflects the resources available to pay benefits to members, including retirees and beneficiaries.
  - The Statement of Changes in Fiduciary Net Position – Pension Funds is presented for the pension funds for the year ended June 30, 2023. This financial statement reflects the changes in the resources available to pay benefits to members, including retirees and beneficiaries during the fiscal year.
  - Notes to the Financial Statements. The Notes to the Financial Statements provide additional information that is essential to a full understanding of the data provided in the financial statements.
2. **Required Supplementary Information.** The required supplementary information consists of management discussion and analysis of schedules concerning the net pension liability and changes therein, schedule of investment returns and actuarially determined contribution requirements for the defined benefit retirement systems.

**OVERVIEW OF THE FINANCIAL STATEMENTS (Continued)**

**PENSION TRUST FUNDS - DEFINED BENEFIT SYSTEMS**

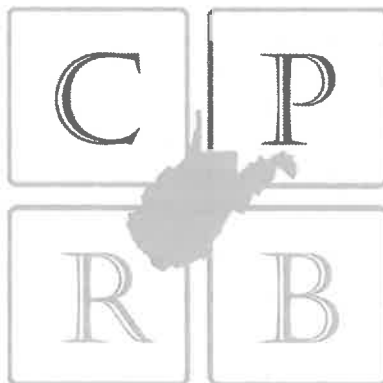
**Investment Management**

Investments held by the defined benefit retirement systems administered by the WV CPRB are managed, as required by West Virginia Code § 12-6-1, by the West Virginia Investment Management Board (WV IMB). The WV IMB maintains nine commingled investment pools by investment type in which the defined benefit systems are invested. Each defined benefit system owns an equity position in each pool and receives proportionate investment income from each pool in accordance with the system's respective ownership percentage in each pool. The value of each system's investments in each of these investment pools is presented in the Statement of Fiduciary Net Position. Investment gains or losses are reported in the Statement of Changes in Fiduciary Net Position for each system.

At June 30, 2023, the nine defined benefit retirement systems had total investments of approximately \$20.26 billion. The defined benefit retirement systems experienced annual investment returns ranging from 9% to 24.4%, net of fees, compared to the actuarial assumed rate of return of 7.25%, net of fees. Fixed income returns ranged from (0.1%) to 3.7%, net of fees.

**Administrative Costs**

Administrative expenses are allocated to the retirement systems monthly based on each retirement system proportionately based on total proportionate share of the total invested assets at the beginning of the fiscal year.



**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Management's Discussion and Analysis (Continued)**

**PENSION TRUST FUNDS - DEFINED BENEFIT SYSTEMS (continued)**

**Public Employees' Retirement System (PERS)**

The Public Employees' Retirement System (PERS) provides retirement benefits to covered employees of the State of West Virginia and other political subdivisions. Employee and employer contributions and earnings on investments fund benefits of the system.

The net position restricted for pensions (total assets minus liabilities) of PERS on June 30, 2023, was approximately \$8.4 billion, an increase of \$393.7 million [+4.92%] from the plan net position restricted for pensions at June 30, 2022.

Additions to PERS' net position restricted for pensions includes employer and employee contributions, and investments gains or losses. Contribution revenue for fiscal year 2023 totaled approximately \$241.87 million, a decrease of \$7.06 million [2.86%] compared to fiscal year 2022. The decrease in contributions can be attributed to the retirement of covered employees. PERS reported net investment income of approximately \$669.2 million for fiscal year 2023, which was an increase of \$1.21 billion [223.36%] from fiscal year 2022. The system's investment returns were consistent with the overall market returns during the fiscal year.

Deductions from PERS net position restricted for pensions resulted from retirement and beneficiary benefits, administrative expenses, services transfers, and refunds to members terminating service. For fiscal year 2023, benefits were approximately \$507.21 million, an increase of approximately \$17.89 million [3.66%] from the prior year. The increase in benefits is due to the number of members retiring exceeding the number of those who became deceased. For fiscal 2023, the administrative costs of administering the retirement system totaled approximately \$3.74 million, an increase of \$0.22 million [+6.24%], from \$3.52 million in fiscal year 2022. The increase in investments creates higher administrative fees.

Refunds and Transfers are the result of employees leaving public service and requesting the money they contributed, plus interest, into the system to be returned or transferring their service credit to another retirement system in which they are eligible. Refunds and Transfers were approximately \$18.04 million in fiscal year 2023, an increase of approximately \$4.48 million [+33.1%], from the approximately \$13.56 million in fiscal year 2022.

Annually, an actuarial valuation of the system's assets and the net pension liability is performed. The most recent actuarial valuation, the fiduciary net position as a percentage of total pension liability increased from 98.24% on June 30, 2022, to 100.05% on June 30, 2023. The net pension (asset) liability as a percentage of covered payroll was 8.88% and 0.27% as of June 30, 2022, and 2023, respectively. The net pension (asset) liability was (\$4.48) million as of June 30, 2023, compared to \$143.04 million as of June 30, 2022.

| Public Employees Retirement System |                     |                     |
|------------------------------------|---------------------|---------------------|
| Net position                       |                     |                     |
| June 30, (Dollars in Thousands)    |                     |                     |
| Assets:                            | 2023                | 2022                |
| Cash                               | \$ 1,416            | \$ 789              |
| Investments at Fair Value          | 8,398,436           | 8,004,836           |
| Receivables                        | 5,129               | 5,358               |
| <b>Total Assets</b>                | <b>8,404,981</b>    | <b>8,010,983</b>    |
| <b>Liabilities:</b>                |                     |                     |
| Accrued Expenses                   | 3,882               | 3,654               |
| <b>Total Liabilities</b>           | <b>3,882</b>        | <b>3,654</b>        |
| <b>Total Net Position</b>          | <b>\$ 8,401,099</b> | <b>\$ 8,007,329</b> |

| Public Employees Retirement System                |                     |                     |
|---|---------------------|---------------------|
| Change in Net position                            |                     |                     |
| Fiscal Year Ended June 30, (Dollars in Thousands) |                     |                     |
| Additions:  | 2023                | 2022                |
| Employee Contributions                            | \$ 89,179           | \$ 81,165           |
| Employer Contributions                            | 152,675             | 167,761             |
| Investment Income                                 | 669,213             | (542,500)           |
| Other Income and Transfers In                     | 11,682              | 1,420               |
| <b>Total Additions</b>                            | <b>922,749</b>      | <b>(292,154)</b>    |
| <b>Deductions:</b>                                |                     |                     |
| Benefits  | 507,209             | 489,324             |
| Refunds and Transfers Out                         | 18,045              | 13,557              |
| Administrative Expenses                           | 3,736               | 3,520               |
| <b>Total Deductions</b>                           | <b>528,990</b>      | <b>506,401</b>      |
| Change in Net Position                            | 393,770             | (798,555)           |
| <b>Total Beginning Net Position</b>               | <b>8,007,329</b>    | <b>8,805,884</b>    |
| <b>Total Ending Net Position</b>                  | <b>\$ 8,401,099</b> | <b>\$ 8,007,329</b> |

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Management's Discussion and Analysis (Continued)**

**PENSION TRUST FUNDS - DEFINED BENEFIT SYSTEMS (continued)**

**Teachers' Retirement System (TRS)**

The Teachers' Retirement System (TRS) provides retirement benefits to covered teachers and school service personnel in the State of West Virginia. Employee and employer contributions and earnings on investments fund benefits of the system.

The net position restricted for pensions (total assets minus liabilities) of TRS on June 30, 2023, was approximately \$9.4 billion, an increase of \$398.5 million [4.43%] from the plan net position restricted for pensions at June 30, 2022.

Additions to TRS' net position restricted for pensions include employer and employee contributions and investments gains or losses. Contribution revenue for fiscal year 2023 totaled approximately \$556.95 million, a decrease of \$21.75 million [3.76%] compared to fiscal year 2022. The decrease in contributions is directly related to the retirement of covered employees. TRS reported net investment income of approximately \$739.89 million for fiscal year 2023, which was an increase of \$1.34 billion [223.2%] from fiscal year 2022. The system's investment returns were consistent with the overall market returns during the fiscal year.

Deductions from TRS net position restricted for pensions resulted from retirement and beneficiary benefits, administrative expenses, services transfers, and refunds to members terminating service. For fiscal year 2023, benefits were approximately \$885.27 million, an increase of approximately \$7.5 million [.86%] from the prior year. The increase in benefits is due to the number of members retiring exceeding the number of those who became deceased. For fiscal 2023, the administrative costs of administering the retirement system totaled approximately \$4.19 million, an increase of \$.24 million [6.1%], from \$3.95 million in fiscal year 2022. The increase in investments creates higher administrative fees.

Refunds and Transfers are the result of employees leaving public service and requesting the money they contributed plus interest into the system to be returned or transferring their service credit to another retirement system in which they are eligible. Refunds and Transfers Out were approximately \$12.75 million in fiscal year 2023, a decrease of approximately \$193 thousand [1.5%], from the approximately \$12.94 million in fiscal year 2022.

Annually, an actuarial valuation of the system's assets and the net pension liability is performed. The most recent actuarial valuation, the fiduciary net position as a percentage of total pension liability increased from 77.78% on June 30, 2022, to 80.42% on June 30, 2023. The net pension liability as a percentage of covered payroll changed from 157.18% to 135.74% as of June 30, 2022, and 2023, respectively. The net pension liability was \$2.29 billion as of June 30, 2023, compared to \$2.57 billion as of June 30, 2022.

| Teachers' Retirement System     |                     |                     | Teachers' Retirement System                       |                     |                     |
|---------------------------------|---------------------|---------------------|---|---------------------|---------------------|
| Net Position                    |                     |                     | Change in Net Position                            |                     |                     |
| June 30. (Dollars in Thousands) |                     |                     | Fiscal Year Ended June 30. (Dollars in Thousands) |                     |                     |
| Assets:                         | 2023                | 2022                | Additions:  | 2023                | 2022                |
| Cash                            | \$ 62,784           | \$ 3,369            | Employee Contributions                            | \$ 104,429          | \$ 95,694           |
| Investments at Fair Value       | 9,319,702           | 8,980,422           | Employer Contributions                            | 135,050             | 128,717             |
| Receivables                     | 22,233              | 22,100              | Other Contributions                               | 317,471             | 354,288             |
| <b>Total Assets</b>             | <b>9,404,719</b>    | <b>9,005,891</b>    | Investment Income                                 | 739,885             | (600,544)           |
|                                 |                     |                     | Other Income and Transfers In                     | 3,925               | 3,573               |
|                                 |                     |                     | <b>Total Additions</b>                            | <b>1,300,760</b>    | <b>(18,272)</b>     |
| <b>Liabilities:</b>             |                     |                     | <b>Deductions:</b>                                |                     |                     |
| Accrued Expenses                | 4,315               | 4,034               | Benefits  | 885,273             | 877,766             |
| <b>Total Liabilities</b>        | <b>4,315</b>        | <b>4,034</b>        | Refunds and Transfers Out                         | 12,748              | 12,941              |
|                                 |                     |                     | Administrative Expenses                           | 4,192               | 3,951               |
| <b>Total Net Position</b>       | <b>\$ 9,400,404</b> | <b>\$ 9,001,857</b> | <b>Total Deductions</b>                           | <b>902,213</b>      | <b>894,658</b>      |
|                                 |                     |                     | Change in Net Position                            | 398,547             | (912,930)           |
|                                 |                     |                     | <b>Total Beginning Net Position</b>               | <b>9,001,857</b>    | <b>9,914,787</b>    |
|                                 |                     |                     | <b>Total Ending Net Position</b>                  | <b>\$ 9,400,404</b> | <b>\$ 9,001,857</b> |

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Management's Discussion and Analysis (Continued)**

**PENSION TRUST FUNDS - DEFINED BENEFIT SYSTEMS (Continued)**

**State Police Death, Disability, and Retirement System (SPDDRS)**

The West Virginia State Police Death, Disability and Retirement System (SPDDRS) was established to provide retirement, disability, and death benefits for all state troopers hired before March 12, 1994. Employee and employer contributions and earnings on investments fund benefits of the system. Civilian employees of the West Virginia State Police are members of the Public Employees Retirement System (PERS).

The net position restricted for pensions (total assets minus liabilities) of SPDDRS on June 30, 2023, was approximately \$778.13 million, an increase of \$10.93 million [1.42%] from the plan net position restricted for pensions on June 30, 2022.

Additions to SPDDRS' net position restricted for pensions include employer and employee contributions and investments gains or losses. Contribution revenue for fiscal year 2023 totaled approximately \$61 thousand, a decrease of \$9 thousand [-12.86%] compared to fiscal year 2022. The West Virginia Legislature did not appropriate funds for the plan as they did in the prior fiscal year. SPDDRS reported net investment income of approximately \$62.96 million for fiscal year 2023, which was an increase of \$114.08 million [223.12%] from fiscal year 2022. The system's investment returns were consistent with the overall market returns during the fiscal year.

Deductions from SPDDRS' net position restricted for pensions resulted from retirement and beneficiary benefits, administrative expenses, services transfers, and refunds to members terminating service. For fiscal year 2023, benefits were approximately \$52.4 million, an increase of approximately \$.98 million [1.91%] from the prior year. The increase in benefits is due to the number of members retiring exceeding the number of those who became deceased. For fiscal 2023, the administrative costs of administering the retirement system totaled approximately \$358 thousand, which was an increase of \$18 thousand from fiscal year 2022. The increase in investments creates higher administrative fees.

Annually, an actuarial valuation of the system's assets and the net pension liability is performed. The most recent actuarial valuation, the fiduciary net position as a percentage of total pension liability increased from 94.99% on June 30, 2022, to 96% on June 30, 2023. The net pension liability as a percentage of covered payroll changed from 11,462.04% to 11,180.69% as of June 30, 2022, and 2023, respectively. The net pension liability was \$32.42 million as of June 30, 2023, compared to \$40.46 million as of June 30, 2022.

| State Police Death, Disability and Retirement System |                   |                   |
|--|-------------------|-------------------|
| Net Position   |                   |                   |
| June 30, (Dollars in Thousands)                      |                   |                   |
| Assets:  | 2023              | 2022              |
| Cash   | \$ 49             | \$ 33             |
| Investments at Fair Value                            | 778,440           | 767,509           |
| Receivables  | 3                 | 3                 |
| <b>Total Assets</b>                                  | <b>778,492</b>    | <b>767,545</b>    |
| <b>Liabilities:</b>                                  |                   |                   |
| Accrued Expenses                                     | 358               | 340               |
| <b>Total Liabilities</b>                             | <b>358</b>        | <b>340</b>        |
| <b>Total Net Position</b>                            | <b>\$ 778,134</b> | <b>\$ 767,205</b> |

| State Police Death, Disability and Retirement System |                   |                   |
|--|-------------------|-------------------|
| Change in Net Position                               |                   |                   |
| Fiscal Year Ended June 30, (Dollars in Thousands)    |                   |                   |
| Additions:   | 2023              | 2022              |
| Employee Contributions                               | \$ 22             | \$ 26             |
| Employer Contributions                               | 40                | 44                |
| Other Contributions                                  | -                 | 17,798            |
| Investment Income                                    | 62,950            | (51,130)          |
| Other Income   | 704               | 721               |
| <b>Total Additions</b>                               | <b>63,716</b>     | <b>(32,541)</b>   |
| <b>Deductions:</b>                                   |                   |                   |
| Benefits   | 52,429            | 51,447            |
| Administrative Expenses                              | 358               | 340               |
| <b>Total Deductions</b>                              | <b>52,787</b>     | <b>51,787</b>     |
| Change in Net Position                               | 10,929            | (84,328)          |
| <b>Total Beginning Net Position</b>                  | <b>767,205</b>    | <b>851,533</b>    |
| <b>Total Ending Net Position</b>                     | <b>\$ 778,134</b> | <b>\$ 767,205</b> |

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Management's Discussion and Analysis (Continued)**

**PENSION TRUST FUNDS - DEFINED BENEFIT SYSTEMS (Continued)**

**State Police Retirement System (SPRS)**

The West Virginia State Police Retirement System (SPRS) was established to provide retirement, disability, and death benefits for all state troopers hired on or after March 12, 1994. Employee and employer contributions and earnings on investments fund benefits of the system. Civilian employees of the West Virginia State Police are members of the Public Employees Retirement System (PERS).

The net position restricted for pensions (total assets minus liabilities) of SPRS on June 30, 2023, was approximately \$320.04 million, an increase of \$30.74 million [10.63%] from the plan net position restricted for pensions at June 30, 2022.

Additions to SPRS' net position restricted for pensions include employer and employee contributions and investments gains or losses. Contribution revenue for fiscal year 2023 totaled approximately \$12.96 million, a decrease of \$.86 million [6.2%] compared to fiscal year 2022. SPRS reported net investment income of approximately \$24.9 million for fiscal year 2023, which was an increase of \$44.75 million [225.83%] from fiscal year 2022. The system's investment returns were consistent with the overall market returns during the fiscal year.

Deductions from SPRS net position restricted for pensions resulted from retirement and beneficiary benefits, administrative expenses, services transfers, and refunds to members terminating service. For fiscal year 2023, benefits were approximately \$6.8 million, an increase of approximately \$1.54 million [29%] from the prior year. The increase in benefits is due to the number of members retiring exceeding the number of those who became deceased. For fiscal 2023, the administrative costs of administering the retirement system totaled approximately \$135 thousand, which is an increase of \$15 thousand from fiscal year 2022. The increase in investments creates higher administrative fees.

Refunds and Transfers are the result of employees leaving public service and requesting the money they contributed plus interest into the system to be returned or transferring their service credit to another retirement system in which they are eligible. Refunds and Transfers were approximately \$320 thousand in fiscal year 2023, a decrease of approximately \$133 thousand [29.36%], from approximately \$453 thousand in fiscal year 2022.

Annually, an actuarial valuation of the system's assets and the net pension liability is performed. The most recent actuarial valuation, the fiduciary net position as a percentage of total pension liability increased from 87.52% on June 30, 2022, to 88.30% on June 30, 2023. The net pension (asset) liability as a percentage of covered employee payroll changed from 117.41% to 109.25% as of June 30, 2022, and 2023, respectively. The net pension liability was \$42.4 million as of June 30, 2023, compared to \$41.24 million as of June 30, 2022.

| State Police Retirement System  |                   |                   |
|---------------------------------|-------------------|-------------------|
| Net Position                    |                   |                   |
| June 30, (Dollars in Thousands) |                   |                   |
| Assets:                         | 2023              | 2022              |
| Cash                            | \$ 64             | \$ 17             |
| Investments at Fair Value       | 320,096           | 289,417           |
| Receivables                     | 26                | -                 |
| <b>Total Assets</b>             | <b>320,186</b>    | <b>289,434</b>    |
| Liabilities:                    |                   |                   |
| Accrued Expenses                | 142               | 131               |
| <b>Total Liabilities</b>        | <b>142</b>        | <b>131</b>        |
| <b>Total Net Position</b>       | <b>\$ 320,044</b> | <b>\$ 289,303</b> |

| State Police Retirement System                    |                   |                   |
|---|-------------------|-------------------|
| Change in Net Position                            |                   |                   |
| Fiscal Year Ended June 30, (Dollars in Thousands) |                   |                   |
| Additions:  | 2023              | 2022              |
| Employee Contributions                            | \$ 4,860          | \$ 4,395          |
| Employer Contributions                            | 8,100             | 9,428             |
| Other Income                                      | 129               | -                 |
| Investment Income                                 | 24,933            | (19,815)          |
| <b>Total Additions</b>                            | <b>38,022</b>     | <b>(5,992)</b>    |
| Deductions:                                       |                   |                   |
| Benefits  | 6,826             | 5,290             |
| Refunds and Transfers                             | 320               | 453               |
| Administrative Expenses                           | 135               | 120               |
| <b>Total Deductions</b>                           | <b>7,281</b>      | <b>5,863</b>      |
| Change in Net Position                            | 30,741            | (11,855)          |
| <b>Total Beginning Net Position</b>               | <b>289,303</b>    | <b>301,168</b>    |
| <b>Total Ending Net Position</b>                  | <b>\$ 320,044</b> | <b>\$ 289,303</b> |

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Management's Discussion and Analysis (Continued)**

**PENSION TRUST FUNDS - DEFINED BENEFIT SYSTEMS (Continued)**

**Deputy Sheriff Retirement System (DSRS)**

The Deputy Sheriff Retirement System (DSRS) provides retirement benefits for all deputy sheriffs hired by all 55 county governments in West Virginia on or after July 1, 1998. Employee and employer contributions and earnings on investments fund benefits of the system.

The net position restricted for pensions (total assets minus liabilities) of DSRS on June 30, 2023, was approximately \$317 million, an increase of \$22.7 million [7.7%] from the plan net position restricted for pensions at June 30, 2022.

Additions to DSRS' net position restricted for pensions include employer and employee contributions and investments gains or losses. Contribution revenue for fiscal year 2023 totaled approximately \$14.59 million, an increase of \$.80 million [5.8%] compared to fiscal year 2022. The increase in contributions is directly related to the increase in wages reported by the participating employers for covered employees. DSRS reported net investment income of approximately \$24.93 million for fiscal year 2023, which was an increase of \$44.9 million [224.79%] from the from the fiscal year 2022. The system's investment returns were consistent with the overall market returns during the fiscal year.

Deductions from DSRS net position restricted for pensions resulted from retirement and beneficiary benefits, administrative expenses, services transfers, and refunds to members terminating service. For fiscal year 2023, benefits were approximately \$15.74 million, an increase of approximately \$1.25 million [8.62%] from the prior year. The increase in benefits is due to the number of members retiring exceeding the number of those who became deceased. For fiscal 2023, the administrative costs of administering the retirement system totaled approximately \$137 thousand, an increase of \$11 thousand [8.7%], from \$126 thousand in fiscal year 2022. The increase in investments creates higher administrative fees.

Refunds and Transfers are the result of employees leaving public service and requesting the money they contributed plus interest into the system to be returned. Refunds and Transfers Out were approximately \$1.23 million in fiscal year 2023, an increase of approximately \$244 thousand [24.87%], from approximately \$981 thousand in fiscal year 2022.

Annually, an actuarial valuation of the system's assets and the net pension liability is performed. The most recent actuarial valuation, the fiduciary net position as a percentage of total pension liability increased from 88.11% on June 30, 2022, to 89.39% on June 30, 2023. The net pension (asset) liability as a percentage of covered payroll changed from 63.77% to 57.34% as of June 30, 2022, and 2023, respectively. The net pension liability was \$37.64 million as of June 30, 2023, compared to a net pension liability of \$39.72 million as of June 30, 2022.

| Deputy Sheriff Retirement System |                   |                   |  |
|----------------------------------|-------------------|-------------------|--|
| Net Position                     |                   |                   |  |
| June 30, (Dollars in Thousands)  |                   |                   |  |
| Assets:                          | 2023              | 2022              |  |
| Cash                             | \$ 170            | \$ 142            |  |
| Investments at Fair Value        | 316,039           | 293,315           |  |
| Receivables                      | 957               | 958               |  |
| <b>Total Assets</b>              | <b>317,166</b>    | <b>294,415</b>    |  |
| <b>Liabilities:</b>              |                   |                   |  |
| Accrued Expenses                 | 143               | 126               |  |
| <b>Total Liabilities</b>         | <b>143</b>        | <b>126</b>        |  |
| <b>Total Net Position</b>        | <b>\$ 317,023</b> | <b>\$ 294,289</b> |  |

| Deputy Sheriff Retirement System                  |                   |                   |  |
|---|-------------------|-------------------|--|
| Change in Net Position                            |                   |                   |  |
| Fiscal Year Ended June 30, (Dollars in Thousands) |                   |                   |  |
| Additions:  | 2023              | 2022              |  |
| Employee Contributions                            | \$ 5,778          | \$ 5,531          |  |
| Employer Contributions                            | 8,811             | 8,258             |  |
| Investment Income                                 | 24,926            | (19,974)          |  |
| Other Income and Transfers In                     | 322               | 404               |  |
| <b>Total Additions</b>                            | <b>39,837</b>     | <b>(5,781)</b>    |  |
| <b>Deductions:</b>                                |                   |                   |  |
| Benefits  | 15,739            | 14,491            |  |
| Refunds and Transfers Out                         | 1,225             | 981               |  |
| Administrative Expenses                           | 137               | 126               |  |
| <b>Total Deductions</b>                           | <b>17,101</b>     | <b>15,598</b>     |  |
| Change in Net Position                            | 22,734            | (21,379)          |  |
| <b>Total Beginning Net Position</b>               | <b>294,289</b>    | <b>315,668</b>    |  |
| <b>Total Ending Net Position</b>                  | <b>\$ 317,023</b> | <b>\$ 294,289</b> |  |

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Management's Discussion and Analysis (Continued)**

**PENSION TRUST FUNDS - DEFINED BENEFIT SYSTEMS (Continued)**

**Judges' Retirement System (JRS)**

The Judges' Retirement System (JRS) provides retirement benefits for judges and justices of the State of West Virginia who elect to participate in the retirement system. Employee and employer contributions and earnings on investments fund benefits of the system.

The net position restricted for pensions (total assets minus liabilities) of JRS at June 30, 2023, was approximately \$278.49 million, an increase of \$19.25 million [7.42%] from the plan net position restricted for pensions at June 30, 2022.

Additions to JRS' net position restricted for pensions include employer and employee contributions and investments gains or losses. Contribution revenue for fiscal year 2023 totaled approximately \$1.17 million, a decrease of \$205 thousand [14.95%] compared to fiscal year 2022. JRS reported net investment income of approximately \$22.03 million for fiscal year 2023, which was an increase of \$39.66 million [224.96%] from the fiscal year 2022. The system's investment returns were consistent with the overall market returns during the fiscal year.

Deductions from JRS net position restricted for pensions resulted from retirement and beneficiary benefits, administrative expenses, services transfers, and refunds to members terminating service. For fiscal year 2023, benefits were approximately \$5.13 million, an increase of approximately \$88 thousand [1.74%] from the prior year. The increase in benefits is due to the number of members retiring exceeding the number of those who became deceased. For fiscal 2023, the administrative costs of administering the retirement system totaled approximately \$121 thousand compared to \$112 thousand from fiscal year 2022.

Refunds and Transfers are the result of employees leaving public service and requesting the money they contributed plus interest into the system to be returned or transferring their service credit to/from another retirement system in which they are eligible. Refunds and Transfers were \$0 in fiscal year 2023 and 2022.

Annually, an actuarial valuation of the system's assets and the net pension liability (asset) is performed. The most recent actuarial valuation, the fiduciary net position as a percentage of total pension liability increased from 231.54% on June 30, 2022, to 244.63% on June 30, 2023. The net pension asset as a percentage of covered payroll changed from (1,402.07%) to (1,458.46%) as of June 30, 2022, and 2023, respectively. The net pension asset was \$164.65 million as of June 30, 2023, compared to \$147.28 million as of June 30, 2022.

| Judges' Retirement System       |                   |                   |
|---------------------------------|-------------------|-------------------|
| Net Position                    |                   |                   |
| June 30. (Dollars in Thousands) |                   |                   |
| Assets:                         | 2023              | 2022              |
| Cash                            | \$ 63             | \$ 31             |
| Investments at Fair Value       | 278,545           | 259,323           |
| <b>Total Assets</b>             | <b>278,608</b>    | <b>259,354</b>    |
| Liabilities:                    |                   |                   |
| Accrued Expenses                | 121               | 112               |
| <b>Total Liabilities</b>        | <b>121</b>        | <b>112</b>        |
| <b>Total Net Position</b>       | <b>\$ 278,487</b> | <b>\$ 259,242</b> |

| Judges' Retirement System                         |                   |                   |
|---|-------------------|-------------------|
| Change in Net Position                            |                   |                   |
| Fiscal Year Ended June 30. (Dollars in Thousands) |                   |                   |
| Additions:  | 2023              | 2022              |
| Employee Contributions                            | \$ 369            | \$ 319            |
| Employer Contributions                            | 797               | 1,052             |
| Investment Income                                 | 22,031            | (17,631)          |
| Other Income and Transfers In                     | 1,303             | -                 |
| <b>Total Additions</b>                            | <b>24,500</b>     | <b>(16,260)</b>   |
| Deductions:                                       |                   |                   |
| Benefits  | 5,134             | 5,046             |
| Refunds and Transfers                             | -                 | -                 |
| Administrative Expenses                           | 121               | 112               |
| <b>Total Deductions</b>                           | <b>5,255</b>      | <b>5,158</b>      |
| Change in Net Position                            | 19,245            | (21,418)          |
| <b>Total Beginning Net Position</b>               | <b>259,242</b>    | <b>280,660</b>    |
| <b>Total Ending Net Position</b>                  | <b>\$ 278,487</b> | <b>\$ 259,242</b> |



**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Management's Discussion and Analysis (Continued)**

**PENSION TRUST FUNDS - DEFINED BENEFIT SYSTEMS (Continued)**

**Emergency Medical Services Retirement System (EMSRS)**

The Emergency Medical Services Retirement System (EMSRS) was established to provide retirement benefits for emergency medical services officers employed by participating public employers who voluntarily elected to participate as of December 31, 2007, and to all emergency medical services officers hired into covered employment by participating public employers of EMSRS on or after January 1, 2008. Employee and employer contributions and earnings on investments fund benefits of the system.

The net position restricted for pensions (total assets minus liabilities) of EMSRS on June 30, 2023, was approximately \$125.9 million, an increase of \$12.97 million [11.48%] from the plan net position restricted for pensions at June 30, 2022.

Additions to EMSRS' net position restricted for pensions include employer and employee contributions and investments gains or losses. Contribution revenue for fiscal year 2023 totaled approximately \$6.93 million, an increase of \$400 thousand [6.12%] compared to fiscal year 2022. The increase in contributions is directly related to the increase in wages reported by the participating employers for covered employees. EMSRS reported net investment income of approximately \$9.62 million for fiscal year 2023, which was an increase of \$17.29 million [225.36%] from the fiscal year 2022. The system's investment returns were consistent with the overall market returns during the fiscal year.

Deductions from EMSRS net position restricted for pensions resulted from retirement and beneficiary benefits, administrative expenses, services transfers, and refunds to members terminating service. For fiscal year 2023, benefits were approximately \$4.7 million, an increase of approximately \$502 thousand [12%] from the prior year. The increase in benefits is due to the number of members retiring exceeding the number of those who became deceased. For fiscal 2023, the administrative costs of administering the retirement system totaled approximately \$53 thousand, an increase of \$6 thousand [12.77%], from \$47 thousand in fiscal year 2022.

Refunds are the result of employees leaving public service and requesting the money they contributed plus interest into the system to be returned or transferring their service credit to another retirement system in which they are eligible. Refunds were approximately \$1.07 million in fiscal year 2023, an increase of approximately \$184 thousand [20.65%] from approximately \$891 thousand in fiscal year 2022.

Annually, an actuarial valuation of the system's assets and the net pension liability (asset) is performed. The most recent actuarial valuation, the fiduciary net position as a percentage of total pension liability increased from 100.53% on June 30, 2022, to 106% on June 30, 2023. The net pension asset as a percentage of covered payroll changed from (1.74%) to (21.18%) as of June 30, 2022, and 2023, respectively. The net pension asset was \$7.12 million as of June 30, 2023, compared to an asset of \$594 thousand as of June 30, 2022.

| Emergency Medical Services Retirement System |                   |                   |  |
|--|-------------------|-------------------|--|
| Net Position                                 |                   |                   |  |
| June 30, (Dollars in Thousands)              |                   |                   |  |
| Assets:                                      | 2023              | 2022              |  |
| Cash   | \$ 101            | \$ 65             |  |
| Investments at Fair Value                    | 125,180           | 112,408           |  |
| Receivables                                  | 703               | 535               |  |
| <b>Total Assets</b>                          | <b>125,984</b>    | <b>113,008</b>    |  |
| Liabilities:                                 |                   |                   |  |
| Accrued Expenses                             | 53                | 47                |  |
| <b>Total Liabilities</b>                     | <b>53</b>         | <b>47</b>         |  |
| <b>Total Net Position</b>                    | <b>\$ 125,931</b> | <b>\$ 112,961</b> |  |

| Emergency Medical Services Retirement System      |                   |                   |  |
|---|-------------------|-------------------|--|
| Change in Net Position                            |                   |                   |  |
| Fiscal Year Ended June 30, (Dollars in Thousands) |                   |                   |  |
| Additions:  | 2023              | 2022              |  |
| Employee Contributions                            | \$ 3,272          | \$ 2,924          |  |
| Employer Contributions                            | 3,662             | 3,610             |  |
| Investment Income                                 | 9,618             | (7,672)           |  |
| Other Income and Transfers In                     | 2,232             | -                 |  |
| <b>Total Additions</b>                            | <b>18,784</b>     | <b>(1,138)</b>    |  |
| Deductions:                                       |                   |                   |  |
| Benefits  | 4,686             | 4,184             |  |
| Refunds   | 1,075             | 891               |  |
| Administrative Expenses                           | 53                | 47                |  |
| <b>Total Deductions</b>                           | <b>5,814</b>      | <b>5,122</b>      |  |
| Change in Net Position                            | 12,970            | (6,260)           |  |
| <b>Total Beginning Net Position</b>               | <b>112,961</b>    | <b>119,221</b>    |  |
| <b>Total Ending Net Position</b>                  | <b>\$ 125,931</b> | <b>\$ 112,961</b> |  |

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Management's Discussion and Analysis (Continued)**

**PENSION TRUST FUNDS - DEFINED BENEFIT SYSTEMS (Continued)**

**Municipal Police Officers and Firefighters Retirement System (MPFRS)**

The Municipal Police Officers and Firefighters Retirement System (MPFRS) was established to provide retirement benefits for all paid police officers and firefighters first employed in covered employment by a participating municipality or municipal subdivision after the date the municipality or municipal subdivision elected to join MPFRS and are required to be members of MPFRS as a condition of employment.

The net position restricted for pensions (total assets minus liabilities) of MPFRS on June 30, 2023, was approximately \$35.48 million, an increase of \$8.28 million [30.45%] from the plan net position restricted for pensions at June 30, 2022.

Additions to MPFRS' net position restricted for pensions include employer and employee contributions and investments gains or losses. Contribution revenue for fiscal year 2023 totaled approximately \$6.34 million, an increase of \$991 thousand [18.54%] compared to fiscal year 2022. The increase in contributions is directly related to the increase in wages reported by the participating employers for covered employees. MPFRS reported net investment income of approximately \$2.5 million for fiscal year 2023, which was an increase of \$4.37 million [238.58%] from fiscal year 2022. The system's investment returns were consistent with the overall market returns during the fiscal year.

Deductions from MPFRS net position restricted for pensions resulted from retirement and beneficiary benefits, administrative expenses, services transfers, and refunds to members terminating service. For fiscal year 2023, benefits were approximately \$39 thousand, a decrease of \$2 thousand dollars [4.8%] from fiscal year 2022. For fiscal 2022, the administrative costs of administering the retirement system totaled approximately \$12 thousand, an increase of \$2 thousand, from \$10 thousand in fiscal year 2022. The increase in the administrative expenses charged is due to an increase in invested assets.

Refunds are the result of employees leaving public service and requesting the money they contributed plus interest into the system to be returned or transferring their service credit to another retirement system in which they are eligible. Refunds were approximately \$559 thousand in fiscal year 2023, an increase of approximately \$194 thousand [53.15%], from approximately \$365 thousand in fiscal year 2022.

Annually, an actuarial valuation of the system's assets and the net pension liability (asset) is performed. The most recent actuarial valuation, the fiduciary net position as a percentage of total pension asset decreased from 156.08% on June 30, 2022, to 144.88% on June 30, 2023. The net pension asset as a percentage of covered payroll changed from (33.95%) to (32.10%) as of June 30, 2022, and 2023, respectively. The net pension asset was \$10.99 million as of June 30, 2023, compared to \$9.77 million as of June 30, 2022.

| Municipal Police Officers & Firefighters Retirement System |                  |                  |  |
|--|------------------|------------------|--|
| Net Position   |                  |                  |  |
| June 30, (Dollars in Thousands)                            |                  |                  |  |
| Assets:  | 2023             | 2022             |  |
| Cash   | \$ 148           | \$ 41            |  |
| Investments at Fair Value                                  | 34,945           | 26,795           |  |
| Receivables  | 397              | 371              |  |
| <b>Total Assets</b>  | <b>35,490</b>    | <b>27,207</b>    |  |
| <b>Liabilities:</b>  |                  |                  |  |
| Accrued Expenses   | 12               | 10               |  |
| <b>Total Liabilities</b>                                   | <b>12</b>        | <b>10</b>        |  |
| <b>Total Net Position</b>                                  | <b>\$ 35,478</b> | <b>\$ 27,197</b> |  |

| Municipal Police Officers & Firefighters Retirement System |                  |                  |  |
|--|------------------|------------------|--|
| Change in Net Position                                     |                  |                  |  |
| Fiscal Year Ended June 30, (Dollars in Thousands)          |                  |                  |  |
| Additions:   | 2023             | 2022             |  |
| Employee Contributions                                     | \$ 3,168         | \$ 2,673         |  |
| Employer Contributions                                     | 3,168            | 2,672            |  |
| Investment Income  | 2,535            | (1,830)          |  |
| Other Income   | 19               | -                |  |
| <b>Total Additions</b>                                     | <b>8,890</b>     | <b>3,515</b>     |  |
| <b>Deductions:</b>   |                  |                  |  |
| Benefits   | 39               | 41               |  |
| Refunds  | 560              | 365              |  |
| Administrative Expenses                                    | 12               | 10               |  |
| <b>Total Deductions</b>                                    | <b>611</b>       | <b>416</b>       |  |
| Change in Net Position                                     | 8,279            | 3,099            |  |
| <b>Total Beginning Net Position</b>                        | <b>27,197</b>    | <b>24,098</b>    |  |
| <b>Total Ending Net Position</b>                           | <b>\$ 35,478</b> | <b>\$ 27,197</b> |  |

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Management's Discussion and Analysis (Continued)**

**PENSION TRUST FUNDS - DEFINED BENEFIT SYSTEMS (Continued)**

**Natural Resources Police Officers Retirement System (NRPORS)**

The Natural Resources Police Officers Retirement System (NRPORS) was established to provide retirement and disability benefits for the Natural Resources Police Officers, who voluntarily elected to participate (i.e., transfer from PERS to NRPORS) as of January 2, 2021, and for all Natural Resources Police Officers hired into covered employment by the State of West Virginia on or after January 2, 2021. Employee and employer contributions and earnings on investments fund the benefits of the system. Approximately 116 Natural Resources Police Officers elected to transfer from PERS and as a result, approximately \$21.43 million of accumulated member and employer contributions and interest were transferred from PERS to NRPORS during fiscal year 2021.

The net position restricted for pensions (total assets minus liabilities) of NRPORS on June 30, 2022, was approximately \$27.6 million, an increase of \$3.17 million [12.96%] from the plan net position restricted for pensions at June 30, 2022.

Additions to NRPORS' net position restricted for pensions include employer and employee contributions, and investments gains or losses. Contribution revenue for fiscal year 2023 totaled approximately \$1.53 million, an increase of \$140 thousand [10.04%] compared to fiscal year 2022. The increase in contributions is directly related to the increase in wages reported by the participating employers for covered employees. NRPORS reported net investment income of approximately \$2.1 million for fiscal year 2022, which was an increase of \$3.79 million [228.12%] from fiscal year 2022. The system's investment returns were consistent with the overall market returns during the fiscal year.

Deductions from NRPORS net position restricted for pensions resulted from retirement and beneficiary benefits, administrative expenses, services transfers, and refunds to members terminating service. For fiscal year 2023, benefits were approximately \$449 thousand, an increase of \$64 thousand [16.62%] from the prior year. The increase in benefits is due to the number of members retiring exceeding the number of those who became deceased. For fiscal 2023, the administrative costs of administering the retirement system were approximately \$11 thousand.

Refunds and Transfers are the result of employees leaving public service and requesting the money they contributed, plus interest, into the system to be returned or transferring their service credit to another retirement system in which they are eligible. Refunds and Transfers were approximately \$31 thousand in fiscal year 2023, a decrease of approximately \$5 thousand, from approximately \$36 thousand in fiscal year 2022.

Annually, an actuarial valuation of the system's assets and the net pension liability is performed. The most recent actuarial valuation, the fiduciary net position as a percentage of total pension liability increased from 78.81% on June 30, 2022, to 83.73% on June 30, 2023. The net pension (asset) liability as a percentage of covered payroll was 105.75% and 81.51% as of June 30, 2022, and 2023, respectively. The net pension liability was \$5.37 million as of June 30, 2023, compared to \$6.58 million as of June 30, 2022.

| Natural Resources Police Officers Retirement System |    |               |             | Natural Resources Police Officers Retirement System      |                                     |             |               |    |               |
|---|----|---------------|-------------|--|-------------------------------------|-------------|---------------|----|---------------|
| <b>Net Position</b>                                 |    |               |             | <b>Change in Net Position</b>                            |                                     |             |               |    |               |
| <b>June 30. (Dollars in Thousands)</b>              |    |               |             | <b>Fiscal Year Ended June 30. (Dollars in Thousands)</b> |                                     |             |               |    |               |
| <b>Assets:</b>                                      |    | <b>2023</b>   | <b>2022</b> | <b>Additions:</b>  |                                     | <b>2023</b> | <b>2022</b>   |    |               |
| Cash  | \$ | 16            | \$          | 20   | Employee Contributions              | \$          | 678           | \$ | 615           |
| Investments at Fair Value                           |    | 27,642        |             | 24,467   | Employer Contributions              |             | 856           |    | 779           |
| Receivables   |    | -             |             | -  | Investment Income                   |             | 2,128         |    | (1,661)       |
| <b>Total Assets</b>                                 |    | <b>27,658</b> |             | <b>24,487</b>  | Other Income and Transfers In       |             | -             |    | 162           |
| <b>Liabilities:</b>                                 |    |               |             | <b>Total Additions</b>                                   |                                     |             | <b>3,662</b>  |    | <b>(105)</b>  |
| Accrued Expenses                                    |    | 10            |             | 10   | <b>Deductions:</b>                  |             |               |    |               |
| <b>Total Liabilities</b>                            |    | <b>10</b>     |             | <b>10</b>  | Benefits                            |             | 449           |    | 385           |
|   |    |               |             |  | Refunds and Transfers Out           |             | 31            |    | 36            |
| <b>Total Net Position</b>                           | \$ | <b>27,648</b> | \$          | <b>24,477</b>  | Administrative Expenses             |             | 11            |    | 10            |
|   |    |               |             |  | <b>Total Deductions</b>             |             | <b>491</b>    |    | <b>431</b>    |
|   |    |               |             |  | Change in Net Position              |             | 3,171         |    | (536)         |
|   |    |               |             |  | <b>Total Beginning Net Position</b> |             | <b>24,477</b> |    | <b>25,013</b> |
|   |    |               |             |  | <b>Total Ending Net Position</b>    | \$          | <b>27,648</b> | \$ | <b>24,477</b> |

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Management's Discussion and Analysis (Continued)**

**PENSION TRUST FUNDS – TEACHERS DEFINED CONTRIBUTION RETIREMENT SYSTEM**

The Teachers' Defined Contribution Retirement System (TDC Plan) is a multiple employer governmental defined contribution money purchase pension plan, qualified under section 401(a) and made tax-deferred under section 414(h) of the Internal Revenue Code. The TDC Plan provides retirement benefits to full time employees of the State's 55 county public school systems, the State Department of Education, certain Higher Education employees and the Schools for the Deaf and Blind who were hired between July 1, 1991, and June 30, 2005, when the Plan closed for new membership. TDC Plan members may also include former TRS members, including Higher Education employees, who elected to transfer membership to the TDC Plan.

The net position restricted for pensions (total assets minus liabilities) of the TDC Plan on June 30, 2023, was approximately \$664.54 million, an increase of \$59.42 million [9.82%] from the plan net position restricted for pensions at June 30, 2022.

Additions to TDC Plan's net position restricted for pensions include employer and employee contributions and investments gains or losses. Contribution revenue for fiscal year 2023 totaled approximately \$14.93 million, a decrease of \$313 thousand [2.05%] compared to fiscal year 2022. The TDC Plan reported net investment income (loss) of approximately \$70.64 million for fiscal year 2023, which was an increase of \$153.78 million [185%] from the fiscal year 2022. The system's investment returns were consistent with the overall market returns during the fiscal year.

Deductions from the TDC Plan net position restricted for pensions resulted from distributions to plan participants and administrative expenses. For fiscal year 2023, withdrawals, distributions, and forfeitures were approximately \$26.34 million, a decrease of approximately \$5.57 million [18%] from the prior year. For fiscal 2023, the administrative costs of the TDC Plan totaled approximately \$282 thousand, an increase of \$1 thousand [3.56%], from \$281 thousand in fiscal year 2022. The increase in the administrative expenses charged is due to an increase in invested assets.

The administrative costs of the TDC Plan are paid primarily from an administrative fee charged quarterly to each participant's account and revenue sharing from some investment funds. In addition to administrative fees, participants also pay investment fund operating expenses to the investment fund managers depending on the investment options selected by the participant. The TDC Plan's recordkeeper maintains an individual account for each TDC Plan participant to which employer contributions, employee deferrals, and other changes in value are credited.

| Teachers' Defined Contribution Retirement System |                   |                   |
|--|-------------------|-------------------|
| Net Position                                     |                   |                   |
| June 30, (Dollars in Thousands)                  |                   |                   |
| Assets:  | 2023              | 2022              |
| Cash   | \$ 5,556          | \$ 10,109         |
| Investments at Fair Value                        | 663,300           | 603,837           |
| Receivables                                      | 1,061             | 1,201             |
| <b>Total Assets</b>                              | <b>669,917</b>    | <b>615,147</b>    |
| <b>Liabilities:</b>                              |                   |                   |
| Accrued Expenses                                 | 5,381             | 10,029            |
| <b>Total Liabilities</b>                         | <b>5,381</b>      | <b>10,029</b>     |
| <b>Total Net Position</b>                        | <b>\$ 664,536</b> | <b>\$ 605,118</b> |

| Teachers' Defined Contribution Retirement System  |                   |                   |
|---|-------------------|-------------------|
| Change in Net Position                            |                   |                   |
| Fiscal Year Ended June 30, (Dollars in Thousands) |                   |                   |
| Additions:  | 2023              | 2022              |
| Employee Contributions                            | \$ 5,597          | \$ 5,703          |
| Employer Contributions                            | 9,329             | 9,536             |
| Investment Income                                 | 70,638            | (83,137)          |
| Other Income                                      | 471               | 118               |
| <b>Total Additions</b>                            | <b>86,035</b>     | <b>(67,780)</b>   |
| <b>Deductions:</b>                                |                   |                   |
| Forfeitures                                       | 740               | 1,681             |
| Withdrawals and Distributions                     | 25,595            | 30,226            |
| Transfers Out                                     | -                 | -                 |
| Administrative Expenses                           | 282               | 281               |
| <b>Total Deductions</b>                           | <b>26,617</b>     | <b>32,188</b>     |
| Change in Net Position                            | 59,418            | (99,968)          |
| <b>Total Beginning Net Position</b>               | <b>605,118</b>    | <b>705,086</b>    |
| <b>Total Ending Net Position</b>                  | <b>\$ 664,536</b> | <b>\$ 605,118</b> |

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Management's Discussion and Analysis (Continued)**

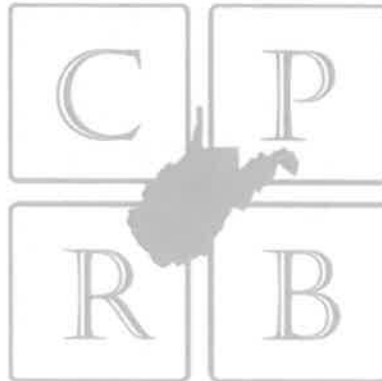
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**ECONOMIC FACTORS, FUTURE FUNDING PROVISIONS, OVERALL OUTLOOK**

The defined benefit retirement systems are funded with the expectation that they will return 7.25% on the invested assets. When that return is not achieved, there is an increase in the net pension liability.

**CONTACTING THE WV CPRB**

This report is designed to provide a financial overview of the WV CPRB to state legislators, members of the Board of Trustees of the WV CPRB, state officials, participating employers, and any other interested parties. Questions or requests for additional information regarding the financial information presented in this report may be addressed in writing to the West Virginia Consolidated Public Retirement Board, 601 57<sup>th</sup> Street, SE, Suite 5, Charleston, West Virginia 25304.





**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Basic Financial Statements**

Statements of Fiduciary Net Position - Pension Funds  
(In Thousand)  
June 30, 2023

|   | Public Employees Retirement System | Teachers' Retirement System | Slate Police Death, Disability and Retirement System | State Police Retirement System | Deputy Sheriff Retirement System | Judges' Retirement System | Emergency Medical Services Retirement System | Municipal Police Officers & Firefighters Retirement System | Natural Resources Police Officers Retirement System | Teachers' Defined Contribution Retirement System | Total         |
|---|------------------------------------|-----------------------------|--|--------------------------------|----------------------------------|---------------------------|--|--|---|--|---------------|
| <b>ASSETS</b>                                   |                                    |                             |  |                                |                                  |                           |  |  |   |  |               |
| Cash  | \$ 1,416                           | \$ 62,781                   | \$ 49  | \$ 64                          | \$ 170                           | \$ 63                     | \$ 101                                       | \$ 138   | \$ 16   | \$ 3,556   | \$ 70,367     |
| Investments at fair value:                      |                                    |                             |  |                                |                                  |                           |  |  |   |  |               |
| Mutual funds                                    | -                                  | -                           | -  | -                              | -                                | -                         | -  | -  | -   | 359,698  | 359,698       |
| Collective investment trusts                    | -                                  | -                           | -  | -                              | -                                | -                         | -  | -  | -   | 122,774  | 122,774       |
| Guaranteed investment contract (contract value) | -                                  | -                           | -  | -                              | -                                | -                         | -  | -  | -   | 180,828  | 180,828       |
| Domestic equity                                 | 381,971                            | 122,941                     | 85,802   | 14,254                         | 14,251                           | 12,500                    | 6,510  | 1,192  | 1,222   | -  | 1,260,910     |
| International qualified                         | 537,495                            | 503,351                     | 50,016   | 20,358                         | 20,179                           | 17,860                    | 7,826  | 2,136  | 1,745   | -  | 2,351,095     |
| International equity                            | 1,010,684                          | 1,118,909                   | 92,655   | 37,984                         | 37,765                           | 33,289                    | 14,622                                       | 3,945  | 3,251   | -  | 5,464,881     |
| Private markets                                 | 2,348,329                          | 2,562,062                   | 218,529  | 88,901                         | 88,136                           | 77,750                    | 34,182                                       | 9,926  | 7,624   | -  | 1,436,317     |
| Total return fixed income                       | 619,106                            | 672,382                     | 56,514   | 23,722                         | 23,401                           | 20,791                    | 9,079  | 2,481  | 2,018   | -  | 1,382,869     |
| Core fixed income                               | 582,903                            | 638,260                     | 53,082   | 23,125                         | 22,507                           | 19,792                    | 8,829  | 2,451  | 1,960   | -  | 1,966,839     |
| Hedge fund                                      | 845,127                            | 932,968                     | 78,649   | 32,965                         | 31,726                           | 27,987                    | 12,306                                       | 3,057  | 2,744   | -  | 4,788,152     |
| Portable alpha                                  | 2,063,608                          | 2,572,212                   | 182,747  | 78,510                         | 77,535                           | 68,412                    | 30,062                                       | 8,904  | 6,752   | -  | 87,939        |
| Short term fixed income                         | 9,213                              | 11,051                      | 436  | 1,291                          | 539                              | 369                       | 2,764  | 1,394  | 326   | -  | 20,262,325    |
| Total investments at fair value                 | 8,398,436                          | 9,312,762                   | 778,440  | 320,091                        | 316,039                          | 278,515                   | 125,180                                      | 34,943   | 27,642  | 663,300  | 20,262,325    |
| Contributions receivable                        | 4,973                              | 21,817                      | -  | 20                             | 808                              | -                         | 703  | 397  | -   | 719  | 29,473        |
| Participants loans receivable                   | -                                  | 380                         | -  | -                              | 135                              | -                         | -  | -  | -   | -  | 521           |
| Miscellaneous revenue receivable                | 156                                | -                           | 3  | -                              | 14                               | -                         | -  | -  | -   | 312  | 515           |
| Total assets                                    | 8,404,981                          | 9,404,714                   | 778,492  | 320,101                        | 317,166                          | 278,608                   | 125,984                                      | 35,400   | 27,658  | 663,317  | 20,363,201    |
| <b>LIABILITIES AND PLAN NET POSITION</b>        |                                    |                             |  |                                |                                  |                           |  |  |   |  |               |
| Liabilities:                                    |                                    |                             |  |                                |                                  |                           |  |  |   |  |               |
| Accrued expenses and other payables             | 3,882                              | 1,317                       | 358  | 112                            | 143                              | 121                       | 53   | 12   | 10  | 991  | 10,032        |
| Forfeitures payable                             | -                                  | -                           | -  | -                              | -                                | -                         | -  | -  | -   | 1,985  | 4,385         |
| Total liabilities                               | 3,882                              | 1,317                       | 358  | 112                            | 143                              | 121                       | 53   | 12   | 10  | 1,986  | 14,417        |
| Net position restricted for pensions            | \$ 8,401,099                       | \$ 9,403,397                | \$ 778,134   | \$ 320,031                     | \$ 317,023                       | \$ 278,487                | \$ 125,931                                   | \$ 35,478  | \$ 27,648   | \$ 661,316                                       | \$ 20,348,784 |

The Accompanying Notes Are An Integral Part Of These Financial Statements

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Basic Financial Statements**

| Statements of Changes in Fiduciary Net Position - Pension Funds <sup>1</sup> |                                     |                             |   |                                |                                  |                           |  |  |   |  |               |
|--|-------------------------------------|-----------------------------|---|--------------------------------|----------------------------------|---------------------------|--|--|---|--|---------------|
| (In Thousands)   |                                     |                             |   |                                |                                  |                           |  |  |   |  |               |
| Year Ended June 30, 2023   |                                     |                             |   |                                |                                  |                           |  |  |   |  |               |
|  | Public Employees' Retirement System | Teachers' Retirement System | State Police Disability and Retirement System | State Police Retirement System | Deputy Sheriff Retirement System | Judges' Retirement System | Emergency Medical Services Retirement System | Municipal Police Officers & Firefighters Retirement System | Natural Resources Police Officers Retirement System | Teachers' Defined Contribution Retirement System | Total         |
| <b>Additions:</b>  |                                     |                             |   |                                |                                  |                           |  |  |   |  |               |
| Contributions:   |                                     |                             |   |                                |                                  |                           |  |  |   |  |               |
| Member contributions   | \$ 89,190                           | \$ 164,432                  | \$ 21   | \$ 4,869                       | \$ 5,776                         | \$ 369                    | \$ 3,272                                     | \$ 4,168   | \$ 678  | \$ 5,597   | \$ 217,363    |
| Employer contributions   | 152,675                             | 135,050                     | 40  | 8,100                          | 8,811                            | 797                       | 3,662  | 3,168  | 856   | 9,329  | 322,488       |
| Other statutorily required contributions                                     | -                                   | 241,718                     | -   | -                              | -                                | -                         | -  | -  | -   | -  | 241,748       |
| Other contributions - appropriations   | 10,800                              | 75,723                      | -   | -                              | -                                | -                         | -  | -  | -   | -  | 86,523        |
| Total contributions  | 252,665                             | 556,923                     | 61  | 12,969                         | 14,587                           | 1,166                     | 6,934  | 6,336  | 1,534   | 14,926   | 868,122       |
| Investment income:   |                                     |                             |   |                                |                                  |                           |  |  |   |  |               |
| Net increase in fair value of investments                                    | 668,541                             | 798,719                     | 62,870  | 24,913                         | 24,907                           | 22,015                    | 9,604  | 2,522  | 2,123   | 21,353   | 1,577,567     |
| Investment income  | 672                                 | 1,166                       | 80  | 20                             | 19                               | 16                        | 14   | 14   | 5   | 19,285   | 51,291        |
| Net investment income  | 669,213                             | 799,885                     | 62,950  | 24,933                         | 24,926                           | 22,031                    | 9,618  | 2,536  | 2,128   | 20,638   | 1,628,858     |
| Transfers from plans   | 186                                 | -                           | -   | -                              | -                                | 714                       | 2,200  | -  | -   | 1  | 3,104         |
| Other income   | 696                                 | 3,922                       | 705   | 129                            | 323                              | 589                       | 32   | 19   | -   | 467  | 6,882         |
| Total additions  | 922,760                             | 1,300,760                   | 63,716  | 38,022                         | 39,836                           | 24,570                    | 18,784                                       | 8,891  | 3,662   | 29,035   | 2,506,966     |
| Deductions and transfers:  |                                     |                             |   |                                |                                  |                           |  |  |   |  |               |
| Benefit expenses   | 507,209                             | 885,273                     | 52,429  | 6,856                          | 15,740                           | 5,134                     | 4,686  | 39   | 449   | -  | 1,477,785     |
| Forfeitures  | -                                   | -                           | -   | -                              | -                                | -                         | -  | -  | -   | 740  | 740           |
| Refunds of contributions/withdrawals   | 15,131                              | 12,558                      | -   | 320                            | 1,225                            | -                         | 1,075  | 559  | 31  | 25,595   | 56,494        |
| Transfers to plans   | 2,914                               | 190                         | -   | -                              | -                                | -                         | -  | -  | -   | -  | 3,104         |
| Administrative expenses  | 3,786                               | 4,192                       | 358   | 135                            | 137                              | 121                       | 53   | 12   | 11  | 282  | 9,037         |
| Total deductions and transfers   | 528,990                             | 992,213                     | 52,787  | 7,281                          | 17,102                           | 5,255                     | 5,814  | 610  | 491   | 26,617   | 1,547,160     |
| Net increase (decrease) in plan net position                                 | 393,770                             | 308,547                     | 10,929  | 30,741                         | 22,734                           | 19,245                    | 12,970                                       | 8,281  | 3,171   | 59,418   | 959,806       |
| Net position restricted for pensions:  |                                     |                             |   |                                |                                  |                           |  |  |   |  |               |
| Beginning of year  | 8,007,329                           | 9,001,857                   | 767,205                                       | 2,89,393                       | 294,289                          | 259,242                   | 112,961                                      | 27,197   | 24,477  | 605,118  | 19,888,978    |
| End of year  | \$ 8,401,099                        | \$ 9,400,404                | \$ 778,134                                    | \$ 3,20,044                    | \$ 317,023                       | \$ 278,487                | \$ 125,931                                   | \$ 35,478  | \$ 27,648   | \$ 664,536                                       | \$ 20,348,784 |

The Accompanying Notes Are An Integral Part Of These Financial Statements



## West Virginia Consolidated Public Retirement Board Notes to the Financial Statements

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### 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Reporting Entity - During fiscal year 1991, the West Virginia State Legislature created the Consolidated Public Retirement Board (the Board) to administer ten of the State of West Virginia's eleven retirement systems. The ten retirement systems included within these financial statements are: the Public Employees' Retirement System (PERS), the Teachers' Retirement System (TRS), the State Police Death, Disability and Retirement System (SPDDRS), the State Police Retirement System (SPRS), the Deputy Sheriff Retirement System (DSRS), the Judges' Retirement System (JRS), the Emergency Medical Services Retirement System (EMSRS), Municipal Police Officers and Firefighters Retirement System (MPFRS), Natural Resources Police Officers' Retirement System (NRPORS), and the Teachers' Defined Contribution Retirement System (TDCRS).

The Total Pension Funds column included in the statement of fiduciary net position and statement of changes in fiduciary net position is for informational purposes only. The assets of each system are only available to satisfy the obligations of that system. The Board's retirement plans are reported as pension trust funds by the State of West Virginia (the State). The Governmental Employees Deferred Compensation Plan is administered by the West Virginia State Treasurer's Office and has been excluded from these financial statements in accordance with Governmental Accounting Standards Board (GASB) Statement No. 32, *Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans*.

The Board is managed by a Board of Trustees, which consists of, by virtue of their position, the Governor, State Auditor, State Treasurer, and Secretary of the Department of Administration, together with the following gubernatorial appointments that are subject to the advice and consent of the State Senate: four residents of the State who are not participants in the retirement systems, one State and one non-State employee participant in PERS, and one participant each from TRS, SPDDRS, SPRS, DSRS, EMSRS, MPFRS, NRPORS and TDCRS.

Pursuant to the West Virginia Code, the Board submits a detailed budgetary schedule of administrative expenses to the Secretary of the Department of Administration prior to the beginning of each fiscal year. The fundamental purpose of budgetary control is to plan for the expected level of operations and to provide management with a tool to control deviation from such plan but does not constitute a legally adopted budget.

Basis of Accounting - The financial statements of the Board have been prepared in conformity with accounting principles generally accepted in the United States of America (GAAP) as applied to governmental units. The Governmental Accounting Standards Board (GASB) is the accepted standard setting body for establishing governmental accounting and financial reporting principles for governmental units. The accompanying pension fund financial statements have been prepared using the economic resources measurement focus and the accrual basis of accounting. System member contributions are recognized in the period when contributions are due. Employer contributions to the system are recognized when due and the employer has made a formal commitment to provide contributions. Benefits and refunds are recognized when due and payable in accordance with the terms of each system. The Board's assets are held primarily in accounts maintained by the State Treasurer, the West Virginia Investment Management Board (the WVIMB), and the third-party administrator of its defined contribution system (EMPOWER Retirement).

Cash - The State Treasurer has statutory responsibility for the daily cash management activities of the state's agencies, departments, boards, and commissions. The amounts on deposit with the State Treasurer are available for immediate withdrawal and, accordingly, are presented as cash in the accompanying financial statements.

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

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**1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)**

Investments - All defined benefit system funds not required to meet disbursement needs are invested in accordance with the West Virginia Code, as well as policies established by the WVIMB. The WVIMB has established various investment pools to provide for the investment of the defined benefit system's assets. These investment pools are structured as multiparticipant variable net asset funds.

Investments in the WVIMB Pools are carried at fair value using the net asset value per share (or its equivalent) as a practical method.

The TDCRS investments are held by an investment company which also serves as the third-party administrator for the system. As prescribed by West Virginia Code, the TDCRS investments are allocated to participant accounts and the participants direct the investment of their individual account balances by selecting from a list of system mutual funds or a long-term fixed investment option.

The TDCRS investments are carried at fair value (except for fully benefit-responsive investment contracts, which are reported at contract value) as determined by a third-party pricing service utilized by an investment management company. For fully benefit-responsive investment contracts, contract value is the relevant measure for the portion of investments attributable to fully benefit-responsive investment contracts because contract value is the amount participants normally would receive if they were to initiate permitted transactions under the terms of the system. Investment income for the TDCRS is determined monthly and distributed to the individual participant accounts.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. See Note 4 for further discussion regarding the fair value of the Board's investments.

Contributions Receivable - Contributions receivable represent funds owed to the Board from other government employer or non-government employer entities participating in the various retirement systems.

Participant Loans Receivable - TRS and DSRS allow loans to its members, hired prior to July 1, 2005, up to the lesser of one-half of a member's accumulated contributions or \$8,000, at an interest rate indexed to the interest rate used by the Board for determining actuarial contribution levels. TRS and DSRS loans require repayment over varying terms, with a maximum term of five years and a minimum period of six months.

Allowance for Doubtful Accounts - The Board evaluates all receivables for collectability based on historical collectability experience, the ability of payee to perform, and such other factors which, in the Board's judgment, require consideration in estimating doubtful accounts.

Accrued Expenses and Other Payables - For the retirement systems, accrued expenses and other payables primarily represent retirement annuity amounts due to new retirees.

Investment Related Expenses - Investments are invested in multiparticipant pools and investment-related expenses are not readily separable by participant in each pool. Investment income from the pools is reported net of investment expenses.

Accounting Estimates - The preparation of financial statements in accordance with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, and disclosure of actuarial accrued liabilities, contingent assets, and contingent liabilities as of the financial statement date, and the reported amounts of additions and deductions for the reporting period. Actual amounts could differ from those estimates.

The various retirement systems utilize various investment instruments. Investment securities, in general, are exposed to various risks, such as interest rate, credit, and overall market volatility. Due to the level of risk associated with certain investment securities, it is reasonably possible that changes in the value of investment securities will occur in the near term and that such change could materially affect the amounts reported in the statement of fiduciary net position. Changes in the value of investment securities could affect the future funding status of the systems or require additional contributions to maintain the current funding status.

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**2 - PLAN DESCRIPTIONS AND CONTRIBUTION INFORMATION**

Membership in the systems consisted of the following as of July 1, 2022, the date of the annual actuarial valuation:

As of July 1, 2022:

|  | PERS          | TRS           | SPDDRS     | SPRS       | DSRS         | JRS        | EMSRS        | MPERS      | NRPORS     |
|--|---------------|---------------|------------|------------|--------------|------------|--------------|------------|------------|
| Retirees and beneficiaries currently receiving benefits            | 29,405        | 37,097        | 743        | 119        | 517          | 57         | 154          | 1          | 7          |
| Terminated members entitled to benefits but not yet receiving them | 5,132         | 3,318         | 2          | 23         | 132          | 2          | 94           | 15         | 3          |
| Terminated nonvested members                                       | 23,876        | 6,437         | 1          | 148        | 342          | -          | 403          | 238        | 6          |
| Active members   | 34,952        | 34,871        | 3          | 590        | 1,085        | 81         | 659          | 602        | 115        |
| <b>Total</b>   | <b>93,365</b> | <b>81,723</b> | <b>749</b> | <b>880</b> | <b>2,076</b> | <b>140</b> | <b>1,310</b> | <b>856</b> | <b>131</b> |

Funding policies for all systems have been established by and are changed from time-to-time by action of the State Legislature. While contribution rates are legislatively determined, actuarial valuations are performed to assist the Board and the West Virginia Legislature in determining contribution rates. The following information is provided for general information purposes only. System participants should refer to the respective West Virginia State Code section for more complete information.

**Defined Benefit Plans**

Public Employees' Retirement System (PERS)

*Plan Description* - PERS is a multiple employer defined benefit cost sharing public employee retirement system covering substantially all employees of the State and its component units, as well as employees of participating non-State governmental entities who are not participants of another state or municipal retirement system. The numbers of participating employers are as follows:

|                              | June 30, 2023 |
|------------------------------|---------------|
| West Virginia state agencies | 132           |
| Cities and towns             | 122           |
| Counties                     | 55            |
| Special districts            | 392           |
| <b>Total</b>                 | <b>701</b>    |

PERS provides retirement benefits as well as death and disability benefits. The qualification for normal retirement is age 60 with five years of service or at least age 55 with age and service equal to 80 or greater. For all employees hired after July 1, 2015, qualification for normal retirement is age 62 with 10 years of service. The straight life annuity retirement benefit is equivalent to 2% of the final average salary multiplied by years of service. Final average salary is the average annual salary from the highest 36 consecutive months within the last fifteen years of employment. For all employees hired after July 1, 2015, final average salary is the average annual salary of the highest 60 consecutive months within the last fifteen years of employment. Terminated members with at least five years of contributory service who do not withdraw their accumulated contributions may elect to receive their retirement annuity beginning at age 62. For all employees hired after July 1, 2015, this age increases to 64 with 10 years of service.

Chapter 5, Article 10 of the West Virginia State Code assigns the authority to establish and amend the provisions of the system to the West Virginia Legislature. In certain circumstances, this Article also permits members of TRS to transfer accumulated service credit and member contributions into PERS.

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**2 - PLAN DESCRIPTIONS AND CONTRIBUTION INFORMATION (Continued)**

Public Employees' Retirement System (PERS) (continued)

*Contributions* - Per Chapter 5, Article 10, for periods prior to July 1, 2015, the members contribute 4.5% of annual earnings. Effective July 1, 2016, newly hired members contribute 6% of annual earnings. State and non-state governmental employers' contribution rate was 9% of covered employees' annual earnings for fiscal years ending June 30, 2023. Contributions as a percentage of payroll for members are established by statutes, subject to legislative limitations and are not actuarially determined. Contributions as a percentage of payroll for employers are established by the Board. Employer contributions from State and non-State agencies for the fiscal years ended June 30, 2023, were (in thousands):

|           | 2023       |
|-----------|------------|
| State     | \$ 99,421  |
| Non-State | 53,254     |
| Total     | \$ 152,675 |

Teachers' Retirement System (TRS)

*Plan Description* - TRS is a multiple employer defined benefit cost sharing public employee retirement system covering all full-time employees of the 55 county public school systems in the State and certain personnel of the 13 State-supported institutions of higher education, State Department of Education and the Higher Education Policy Commission hired prior to July 1, 1991. Employees of the State-supported institutions of higher education and the Higher Education Policy Commission hired after June 30, 1991, are required to participate in the Higher Education Retirement System. TRS closed membership to new hires effective July 1, 1991. However, effective July 1, 2005, all new employees hired for the first time are required to participate in TRS. There were 80 employers and one non-employer contributing entity, the State of West Virginia, participating in TRS as of June 30, 2023.

During the 2008 First Special Session, the West Virginia Legislature passed House Bill 101 regarding retirement benefits for teachers and educational service personnel which became effective March 16, 2008. The legislation provided an opportunity for members of TDCRS to elect to transfer to TRS. The transfer occurred on July 1, 2008, and a total of 15,152 TDCRS members transferred to TRS.

TRS provides retirement benefits as well as death and disability benefits. All employees hired before July 1, 2015, are eligible for normal retirement at age 60 with five or more years of service, age 55 with 30 or more years of service or any age with 35 or more years of service, or with reduced benefits before age 55 with at least 30 but less than 35 years of service. For all employees hired after July 1, 2015, qualification for normal retirement is age 62 with 10 or more years of service. All members hired after July 1, 2015, may retire with reduced benefits at age 62 with 10 or more years of service, age 57 with 20 or more years of service or age 55 with at least 30 years of service. Terminated members, who were hired before July 1, 2015, with at least five, but less than 20, years of credited service who do not withdraw their accumulated contributions are entitled to a deferred retirement commencing at age 62 or at age 60 with more than 20 years of service. For all employees hired after July 1, 2015, this requirement increases to age 64 with 10 years of service. Retirement benefits are equivalent to 2% of final average annual salary multiplied by years of service. Final average salary is the average of the 5 highest fiscal years of salaries during the last 15 fiscal years of contributing service.

Chapter 18, Article 7A of the West Virginia State Code assigns the authority to establish and amend the provisions of the plan to the West Virginia Legislature.

*Contributions* - A member who withdraws from service for any cause other than death or retirement may request that the accumulated employee contributions plus interest be refunded.

TRS funding policy provides for member contributions based on 6% of members' gross salary. Contributions as a percentage of payroll for members and employers are established by State law and are not actuarially determined. Employers make the following contributions.

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

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**2 - PLAN DESCRIPTIONS AND CONTRIBUTION INFORMATION (Continued)**

Teachers' Retirement System (TRS) (continued)

The State, county boards of education, and other employers contribute 15% of gross salary of their TRS members hired prior to July 1, 1991. The State, county boards of education, and other employers contribute 7.5% of the gross salary of their TRS covered employees hired for the first time after July 1, 2005, and for those TDCRS members who elected to transfer to TRS effective July 1, 2008. The State contributes a certain percentage of fire insurance premiums paid by State residents to assist in extinguishing the TRS unfunded liability within 40 years of June 30, 1994. Other statutorily required contributions of \$106,179,211 were made through the State's school aid formula during the year ended June 30, 2023. Certain additional contributions of approximately \$241,748,427 were made during the year ended June 30, 2023, representing extra appropriations to reduce the unfunded liability.

State Police Death, Disability and Retirement System (SPDDRS)

*Plan Description* - SPDDRS is a single employer defined benefit public employee retirement system covering all West Virginia State Police (State Police) hired on or before March 11, 1994. This plan is closed to new entrants.

SPDDRS provides retirement benefits as well as death and disability benefits. A member is eligible for normal retirement at age 50 after 20 years of contributory service, or at any age upon completion of 25 years of service. There is no vesting in the State's contributions prior to ten years of service. Benefits payable to members retiring prior to age 50 are deferred until the normal retirement date. The annual retirement benefit is 5.5% of the members' aggregate salary, but not less than \$6,000 per year. Total duty-related disability benefits are equal to 8.5% of the member's aggregate salary, but not less than \$15,000 per year. Aggregate salary is the total salary paid to a member during his or her period of service, which may include up to 5 years of active military service credited at the average departmental salary. Aggregate salary for purposes of determining disability benefits may include salary that would have been earned had the participant served at least 25 years notwithstanding the disability. An annual cost-of-living adjustment of 3.75% is granted to retirees and beneficiaries. For service-connected total disability retirees, the adjustment begins at age 65. A member who terminates employment is entitled to a refund of his or her contributions plus interest.

*Contributions* - SPDDRS funding policy provides for member contributions based on 9% of their annual earnings. The State makes contributions based on 15% of the annual payroll of State Police, as well as contributing all revenue generated by the sale of traffic accident reports, criminal investigation reports and other fees. Contributions, as a percentage of payroll for members and the employer, are established by State law and are not actuarially determined.

State Police Retirement System (SPRS)

*Plan Description* - SPRS is a single employer defined benefit public employee retirement system that was established for all State Police hired on or after March 12, 1994. SPRS provides retirement, death, and disability benefits. A member is eligible for normal retirement at age 50 with 25 years of service or age 52 with 20 years of credited service. A member is eligible for a reduced benefit with 20 years of credited service and retiring before age 52. The annual regular retirement benefit, paid monthly, is equal to 3% of the final average salary multiplied by the years of service. Final average salary is the average of the five highest calendar years of earnings during the last ten years of earnings. Annual retirement annuity adjustments are 1.0% for regular retirement and are payable on July 1 of each year after the member reaches 63 years of age.

*Contributions* - Members contribute 12% of annual base salary. The employer contribution rate was 20% of covered employees' annual base salary for fiscal years ending June 30, 2023.

Chapter 15, Article 2 and Article 2A of the West Virginia State Code assigns the authority to establish and amend the provisions of the SPDDRS and SPRS systems to the West Virginia Legislature.

**West Virginia Consolidated Public Retirement Board  
Notes to the Financial Statements (Continued)**

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**2 - PLAN DESCRIPTIONS AND CONTRIBUTION INFORMATION (Continued)**

Deputy Sheriff Retirement System (DSRS)

*Plan Description* - DSRS, a multiple employer defined benefit cost sharing public employee retirement system, was established for all deputy sheriffs hired by all 55 county governments on or after July 1, 1998. The DSRS was also made available to any deputy sheriff employed in covered employment participating in PERS on the effective date so long as he/she made notification in writing before January 31, 1999, to both the County Commission in the county in which he/she was employed and the Board of his/her desire to transfer to the DSRS. Approximately 600 deputy sheriffs elected such transfer and as a result, approximately \$28,638,000 of accumulated member and employer contributions and interest were transferred from PERS to DSRS in fiscal year 1999, in accordance with Chapter 7, Article 14D of the West Virginia State Code. There were 57 employers participating in DSRS as of June 30, 2023.

DSRS provides retirement as well as death and disability benefits. A member is eligible for normal retirement under the following circumstances:

1. Member in covered employment, with attainment of at least age 50 with age plus service equal to 70 or greater
2. Member in covered employment, has attained the age of 60 years, and has completed five or more years of service
3. Member has ceased covered employment has attained the age of 50 and completion of 20 or more years of service
4. Member has ceased covered employment has attained the age of 62 years and has completed five or more years of service

The annual regular retirement benefit is equal to 2.50% of a member's final average salary multiplied by the member's years of credited service. Final average salary refers to the average of the highest annual compensation received for covered employment by the member during any five consecutive plan years within the member's last ten years of service. A member may elect to receive retirement income payments equal to his/her accrued benefit in the normal form or in a variety of annuity options. The normal form signifies a monthly annuity which is 1/12 of the amount of a member's annual retirement benefit which is payable for the member's life.

Benefit payments did not begin prior to January 1, 2000, except benefit payments resulting from disability.

Chapter 7, Article 14D of the West Virginia State Code assigns the authority to establish and amend the provisions of the system to the West Virginia Legislature.

*Contributions* - Members contribute 8.5% of monthly base salary, and the Sheriff's Office/County Commission of the County in which the member is employed contributed an additional 13% of the member's monthly base salary during the year ended June 30, 2023. In addition, the Sheriff's Office/County Commissions contribute certain fees charged for reports and other services provided by the sheriff's offices.

Judges' Retirement System (JRS)

*Plan Description* - JRS is a single employer defined benefit public employee retirement system covering State judges and justices who elect to participate. JRS provides retirement as well as death and disability benefits. A member who was appointed or elected to the bench prior to July 2, 2005, is eligible for normal retirement upon the attainment of 24 years of service of which at least 12 years is as a sitting judge or justice, 16 years of service at age 65 of which at least 12 years is as a sitting judge or justice, or 8 full years of service after age 65. A member who was appointed or elected to the bench on or after July 2, 2005, is eligible for normal retirement upon the attainment of 24 years of service of which at least 14 years is as a sitting judge or justice, or 16 years of service at age 65 of which 14 years is as a sitting judge or justice. A member on the bench prior to July 2, 2005, is eligible for a deferred benefit upon termination of service prior to normal retirement provided the member completes 16 years of service of which 12 years of service is as a sitting judge or justice. A member of the bench on or after July 2, 2005, is eligible for a deferred benefit upon termination of service prior to normal retirement provided the member completes 16 years of service of which 14 years of service are as a sitting judge or justice.

The annual benefit paid to judges and justices on the bench prior to July 2, 2005, is 75% of the current annual salary of the office from which the participant retires, with surviving spouse and dependent child benefits. This benefit is proportionally increased upon increase in salary for active sitting judges and justices.

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

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**2 - PLAN DESCRIPTIONS AND CONTRIBUTION INFORMATION (Continued)**

Judges' Retirement System (JRS) (continued)

The annual benefit paid to judges and justices on the bench on or after July 2, 2005, is 75% of the member's final average salary. Final average salary means the average of the highest thirty-six consecutive months' compensation received as a judge or justice. No increases in benefits are given by virtue of an increase in salary of active sitting judges or justices.

Chapter 51, Article 9 of the West Virginia State Code assigns the authority to establish and amend the provisions of the system to the West Virginia Legislature.

*Contributions* - JRS funding policy provides for member contributions based on 7% of their annual earnings. This policy also provides for periodic employer contributions at varying amounts appropriated annually by the West Virginia Legislature. However, annual appropriations are determined in consideration of the most recent actuarial valuation. Any participant who terminates before becoming eligible for benefits may elect to withdraw his or her contributions without interest.

Emergency Medical Services Retirement System (EMSRS)

*Plan Description* - EMSRS is a multiple employer defined benefit cost sharing retirement system. The EMSRS Act was passed by the West Virginia Legislature in March 2007. The legislation provided for a voluntary participation election of eligible emergency medical service officers and mandated that certain participation levels be reached by December 31, 2007, in order for the provisions of the Emergency Medical Services Retirement System to become effective. At the close of the election period, fifteen licensed EMS public employers, consisting of twelve eligible Public Employees Retirement System (PERS) political subdivisions and three eligible non-PERS political subdivisions, passed corporate resolutions to become participating public employers of this retirement system. Statewide, over five hundred eligible Emergency Medical Services Officers elected to opt into this new retirement plan. The Emergency Medical Services Retirement System (EMSRS) became effective January 1, 2008. There were 61 employers participating in EMSRS as of June 30, 2023.

The statute prohibited any payout of benefits from the EMSRS fund prior to January 1, 2011, with the exception of duty disability retirement. An EMSRS member is eligible for "normal" retirement when one of the following occurs:

- Attainment of age 50 and the completion of 20 years of contributory service; or
- Attainment of age 50 when age plus contributory service equals 70 while still in covered employment; or
- Attainment of age 60 and completion of 10 years contributory service while still in covered employment; or
- Attainment of age 62 and completion of 5 years of contributory service.

An EMSRS member is eligible for "early retirement" when they reach age 45 and have completed 20 years of service.

Final Average Salary (FAS) is the average of the highest annual compensation received by the member during covered employment for any 5 consecutive plan years (Jan. 1- Dec. 31) within the last 10 years of service. The accrued benefit on behalf of any member is calculated as follows:

Final Average Salary x Years of Credited Service x Benefit Percentage

*Annual Retirement Benefit Formula:*

- 2.75% x FAS x Years of Service for years 1 - 20
- 2.0% x FAS x Years of Service for years 21 - 25
- 1.0% x FAS x Years of Service for years 26 - 30

Chapter 16, Article 5V of the West Virginia State Code assigns the authority to establish and amend the provisions of the plan to the West Virginia Legislature.

*Contributions* - Currently, the EMSRS employee contribution rate is 8.5% of gross monthly salary and the employer contribution rate is 9.5% of gross monthly salary.

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

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**2 - PLAN DESCRIPTIONS AND CONTRIBUTION INFORMATION (Continued)**

Municipal Police Officers and Firefighters Retirement System (MPFRS)

*Plan Description* - MPFRS is a multiple employer defined benefit cost sharing system. The West Virginia Municipal Police Officers and Firefighters Retirement System Act was passed by the West Virginia Legislature in November 2009 and became effective January 1, 2010. The legislation provided for any municipality or municipal subdivision employing municipal police officers or firefighters to elect to become a participating employer. The MPFRS had 651 participating members as of June 30, 2023. All police officers and firefighters first employed in covered employment after the date the municipality or municipal subdivision elected to join MPFRS are required to be members of MPFRS. There were 45 employers participating in MPFRS as of June 30, 2023.

A MPFRS member is eligible for "normal" retirement when one of the following occurs:

- Attainment of age 50 and the completion of 20 years of contributory service; or
- Attainment of age 50 when age plus contributory service equals 70 while still in covered employment;  
or
- Attainment of age 60 and completion of 10 years contributory service while still in covered employment; or
- Attainment of age 62 and completion of 5 years of contributory service.

Final Average Salary (FAS) is the average of the highest annual compensation received by the member during covered employment for any 5 consecutive plan years (Jan. 1 - Dec. 31) within the last 10 years of service. The accrued benefit on behalf of any member is calculated as follows, not to exceed 90% of final average salary:

Final Average Salary x Years of Credited Service x Benefit Percentage

*Annual Retirement Benefit Formula:*

2.75% x FAS x Years of Credited Service for years 1 - 20

2.0% x FAS x Years of Credited Service for years 21 - 25

1.0% x FAS x Years of Credited Service for years 26 - 30

Chapter 8, Article 22A of the West Virginia State Code assigns the authority to establish and amend the provisions of the plan to the West Virginia Legislature.

*Contributions* - Currently, the MPFRS employee and employer contribution rates are both 8.5% of gross monthly salary.

Natural Resources Police Officers Retirement System (NRPORS)

*Plan Description* - NRPORS, a single employer defined benefit public employee retirement system, was established for all natural resources police officers hired by the West Virginia Division of Natural Resources (DNR) on or after January 2, 2021. The NRPORS was also made available to any natural resources police officers employed in covered employment participating in PERS on the effective date so long as he/she made notification in writing before September 30, 2020, to both the DNR and the Board of his/her desire to transfer to the NRPORS. Approximately 115 natural resources police officers elected such transfer and as a result, approximately \$21,432,000 of accumulated member and employer contributions and interest were transferred from PERS to NRPORS during the fiscal year ended June 30, 2021, in accordance with Chapter 20, Article 18 of the West Virginia State Code.

NRPORS provides retirement as well as death and disability benefits. A member is eligible for normal retirement under the following circumstances:

- Member has attained at least age 55 and completion of 15 years of service; or
- Member in covered employment, has attained the age of 55 years with age plus service equal to 70 or greater;  
or
- Member has attained the age of 62 and completion of 10 or more years of service.

All members must have a minimum of 10 years of contributory service to qualify for a retirement benefit.



**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

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**2 - PLAN DESCRIPTIONS AND CONTRIBUTION INFORMATION (Continued)**

Natural Resources Police Officers Retirement System (NRPORS) (continued)

The annual regular retirement benefit is equal to 2.25% of a member's final average salary multiplied by the member's years of credited service. Final average salary refers to the average of the highest annual compensation received for covered employment by the member during any five consecutive plan years within the member's last ten years of service. A member may elect to receive retirement income payments equal to his/her accrued benefit in the normal form or in a variety of annuity options. The normal form signifies a monthly annuity which is 1/12 of the amount of a member's accrued benefit which is payable for the member's life.

Chapter 20, Article 18 of the West Virginia State Code assigns the authority to establish and amend the provisions of the system to the West Virginia Legislature.

*Contributions* - Members contribute 8.5% of monthly base salary, and the DNR as the employer, contribute an additional 9.5% of the member's monthly base salary during the year ended June 30, 2023.

Teachers' Defined Contribution Retirement System (TDCRS)

*Plan Description* - TDCRS is a multiple employer defined contribution retirement system, which is a money purchase pension plan covering primarily full-time employees of the State's 55 county public school systems, the State Department of Education, the Schools for the Deaf and Blind, and the Marshall University Research Corporation who were hired between July 1, 1991, and June 30, 2005. TDCRS members also include former TRS plan members, including higher education employees, who have elected to transfer into or participate in TDCRS. TDCRS' benefits depend solely on amounts contributed to the plan plus investment earnings. Employees are eligible to participate from the date of employment. TDCRS closed participation to new members effective June 30, 2005.

The TDCRS provides members with a choice of 20 separate investment options made up of fixed income, balanced, large cap, mid cap, small cap, and international mutual funds, a money market fund, and a fixed annuity.

*Contributions* - State law requires employees to contribute 4.5% of their gross compensation and the employers to contribute 7.5% of covered members' gross compensation. Employer contributions are comprised from amounts allocated to the employers through the State's School Aid Formula, forfeitures allotted from the TDCRS and county contributions. Employer contributions for each employee (and interest allocated to the employee's account) become partially vested after six years and fully vested after 12 complete years of service. If a terminated employee does not return to active participant status within five years, the nonvested employer contributions and earnings thereon are forfeited to reduce the employer's current period contribution requirement. Any such forfeitures arising from contributions, plus earnings thereon, will be used to reduce future employer contributions.

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**3 - ACTUARIAL INFORMATION - DEFINED BENEFIT PLANS**

The total pension liabilities for financial reporting purposes were determined by actuarial valuations as of July 1, 2022, and rolled forward to June 30, 2023, using the actuarial assumptions and methods described in the *Actuarial Assumptions and Methods* section of this note.

Schedule of Net Pension Liability (Asset)

The schedules of net pension liability (asset) and changes in net pension liability (asset), presented as required supplemental information (RSI) following the notes to the financial statements, present trend information about whether the actuarial values of plan fiduciary net position are increasing or decreasing over time relative to the actuarial values of the total pension liability (asset). Selected information for each plan as of June 30, 2023, were as follows (in thousands):

| As of June 30, 2023: | Total Pension Liability | Plan Fiduciary Net Position | Net Pension Liability (Asset) | Net Position as a Percentage of the Total Pension Liability |
|----------------------|-------------------------|-----------------------------|-------------------------------|---|
| PERS                 | \$ 8,396,617            | \$ 8,401,099                | \$ (4,482)                    | 100.05%   |
| TRS                  | 11,689,810              | 9,400,404                   | 2,289,406                     | 80.42%  |
| SPDDRS               | 810,558                 | 778,134                     | 32,424                        | 96.00%  |
| SPRS                 | 362,443                 | 320,044                     | 42,399                        | 88.30%  |
| DSRS                 | 354,658                 | 317,023                     | 37,635                        | 89.39%  |
| JRS                  | 113,841                 | 278,487                     | (164,646)                     | 244.63%   |
| EMSRS                | 118,805                 | 125,931                     | (7,126)                       | 106.00%   |
| MPFRS                | 24,488                  | 35,478                      | (10,990)                      | 144.88%   |
| NRPORS               | 33,019                  | 27,648                      | 5,371                         | 83.73%  |

Long-Term Expected Rates of Return

The long-term rates of return on pension plan investments were determined using the building block method in which estimates of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentages and by adding expected inflation. Best estimates of long-term geometric rates of return are summarized in the following tables and were used for all defined benefit plans for the year ended June 30, 2023:

| Asset Class          | Target Allocation | Long-term Expected Rate of Return | Weighted Average Expected Real Rate of Return |
|----------------------|-------------------|-----------------------------------|---|
| Domestic Equity      | 27.50%            | 6.5%                              | 1.79%   |
| International Equity | 27.50%            | 9.1%                              | 2.50%   |
| Fixed Income         | 15.00%            | 4.3%                              | 0.65%   |
| Real Estate          | 10.00%            | 5.8%                              | 0.58%   |
| Private Equity       | 10.00%            | 9.2%                              | 0.92%   |
| Hedge Funds          | 10.00%            | 4.6%                              | 0.46%   |
| <b>Total</b>         | <b>100.00%</b>    |                                   | <b>6.90%</b>                                  |
| Inflation (CPI)      |                   |                                   | 2.50%   |
|                      |                   |                                   | <b>9.40%</b>                                  |

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**3 - ACTUARIAL INFORMATION - DEFINED BENEFIT PLANS (Continued)**

Discount Rate

The discount rate used to measure the total pension liability (asset) was 7.25% for all defined benefit plans for fiscal years 2023. The projections of cash flows used to determine the discount rates assumed that employer contributions will continue to follow the current funding policies. Based on these assumptions, the fiduciary net position of each defined benefit pension plan was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rates of return on pension plan investments were applied to all periods of projected benefit payments to determine the total pension liabilities of each plan.

Regarding the sensitivity of the net pension liability (asset) to changes in the discount rate, the following table presents the plans' net pension liabilities calculated using the current discount rate of 7.25% as well as the plans' net pension liabilities if they were calculated using a discount rate that is one percentage point lower or one percentage point higher as of June 30, 2023 (in thousands):

|                      | Total Net Pension Liability (Asset) |                                     |                        |
|----------------------|-------------------------------------|-------------------------------------|------------------------|
|                      | 1% Decrease<br>(6.25%)              | Current<br>Discount Rate<br>(7.25%) | 1% Increase<br>(8.25%) |
| As of June 30, 2023: |                                     |                                     |                        |
| PERS                 | \$ 929,041                          | \$ (4,482)                          | \$ (792,205)           |
| TRS                  | 3,515,950                           | 2,289,406                           | 1,248,400              |
| SPDDRS               | 129,268                             | 32,424                              | (47,676)               |
| SPRS                 | 101,113                             | 42,399                              | (4,809)                |
| DSRS                 | 87,079                              | 37,635                              | (3,076)                |
| JRS                  | (152,275)                           | (164,646)                           | (175,216)              |
| EMSRS                | 10,126                              | (7,126)                             | (21,089)               |
| MPFRS                | (4,305)                             | (10,990)                            | (16,026)               |
| NRPORS               | 9,838                               | 5,371                               | 1,645                  |

Annual Money-Weighted Rates of Return

The following table provides the annual money-weighted rates of return, net of investment expenses, for the year ending June 30, 2023, for each defined benefit pension system:

| System |       |
|--------|-------|
| PERS   | 8.51% |
| TRS    | 8.47% |
| SPDDRS | 8.49% |
| SPRS   | 8.54% |
| DSRS   | 8.53% |
| JRS    | 8.54% |
| EMSRS  | 8.53% |
| MPFRS  | 8.66% |
| NRPORS | 8.55% |

**West Virginia Consolidated Public Retirement Board  
Notes to the Financial Statements (Continued)**

**3 - ACTUARIAL INFORMATION - DEFINED BENEFIT PLANS (Continued)**

Actuarial Assumptions and Methods

Significant assumptions used in the actuarial valuations are as follows:

|  | <u>PERS</u>  | <u>TRS</u>  | <u>SPDDRS</u>   |
|--|--|---|---|
| Actuarial cost method                      | Individual entry age normal cost with level percentage of payroll  | Individual entry age normal cost with level percentage of payroll   | Individual entry age normal cost with level percentage of payroll   |
| Asset valuation method                     | Fair value   | Fair value  | Fair value  |
| Amortization method                        | Level dollar, fixed period   | Level dollar, fixed period  | Level dollar, fixed period  |
| Amortization period                        | Through Fiscal Year 2035   | Through Fiscal Year 2034  | Through Fiscal Year 2025  |
| Actuarial assumptions:                     |  |   |   |
| Investment rate of return                  | 7.25%  | 7.25%   | 7.25%   |
| Projected salary increases:                |  |   |   |
| State                                      | 2.75% - 5.55%  | n/a   | 4.00%   |
| Nonstate                                   | 3.60% - 6.75%  | n/a   | n/a   |
| Educators                                  | n/a  | 2.75% - 5.90%   | n/a   |
| Non-Educators                              | n/a  | 2.75% - 6.50%   | n/a   |
| Inflation rate                             | 2.75%  | 2.75%   | 2.75%   |
| Discount rate                              | 7.25%  | 7.25%   | 7.25%   |
| Mortality rates:                           |  |   |   |
| Actives                                    | 100% of Pub-2010 General Employees table, below-median, headcount weighted, projected generationally with scale MP-2018      | 100% of Pub-2010 General Employees table, headcount weighted, projected generationally with scale MP-2019                 | 100% of Pub-2010 Safety Employee table, amount-weighted, Scale MP-2020 fully generational                   |
| Retired healthy males                      | 108% of Pub-2010 General Retiree Male table, below-median, headcount weighted, projected generationally with scale MP-2018   | 100% of Pub-2010 General Retiree Male table, headcount weighted, projected generationally with scale MP-2019              | 98% of Pub-2010 Safety Retiree Male table, amount weighted, Projected generationally with Scale MP-2020     |
| Retired healthy females                    | 122% of Pub-2010 General Retiree Female table, below-median, headcount weighted, projected generationally with scale MP-2018 | 112% of Pub-2010 General Retiree Female table, headcount weighted, projected generationally with scale MP-2019            | 99% of Pub-2010 Safety Retiree Female table, amount weighted, Projected generationally with Scale MP-2020   |
| Disabled males                             | 118% of Pub-2010 General / Teachers Disabled Male table, headcount weighted, projected generationally with scale MP-2018     | 107% of Pub-2010 General / Teacher Disabled Male table, headcount weighted, projected generationally with scale MP-2019   | 124% of Pub-2010 Safety Disabled Male table, amount weighted, Projected generationally with Scale MP-2020   |
| Disabled females                           | 117% of Pub-2010 General / Teachers Disabled Female table, headcount weighted, projected generationally with scale MP-2018   | 113% of Pub-2010 General / Teacher Disabled Female table, headcount weighted, projected generationally with scale MP-2019 | 100% of Pub-2010 Safety Disabled Female table, amount weighted, Projected generationally with Scale MP-2020 |
| Withdrawal rates:                          |  |   |   |
| State                                      | 2.28% - 45.63%   | n/a   | 0.08% - 2.67%   |
| Nonstate                                   | 2.50% - 35.88%   | n/a   | n/a   |
| Educators                                  | n/a  | 1.60% - 35.00%  | n/a   |
| Non-Educators                              | n/a  | 2.30% - 18.00%  | n/a   |
| Disability rates                           | 0.005% - 0.540%  | 0.004% - 0.563%   | 0.03% - 0.40%   |
| Retirement rates                           | 12% - 100%   | 12.5% - 100%  | 25% - 100%  |
| Date range in most recent experience study | 2013-2018  | 2014 - 2019   | 2015 - 2020   |

**West Virginia Consolidated Public Retirement Board  
Notes to the Financial Statements (Continued)**

**3 - ACTUARIAL INFORMATION - DEFINED BENEFIT PLANS (Continued)**

Actuarial Assumptions and Methods (continued)

|  | SPRS  | DSRS  | JRS  |
|--|---|---|--|
| Actuarial cost method                      | Individual entry age normal cost with level percentage of payroll   | Individual entry age normal cost with level percentage of payroll   | Individual entry age normal cost with level percentage of payroll  |
| Asset valuation method                     | Fair value  | Fair value  | Fair value   |
| Amortization method                        | Level dollar, fixed period  | Level dollar, fixed period  | Level dollar, fixed period   |
| Amortization period                        | Through Fiscal Year 2029  | Through Fiscal Year 2029  | n/a  |
| Actuarial assumptions:                     |   |   |  |
| Investment rate of return                  | 7.25%   | 7.25%   | 7.25%  |
| Projected salary increases:                |   |   |  |
| State                                      | 0.04  | n/a   | 4.25% - 5.00%  |
| Nonstate                                   | n/a   | 3.75% - 5.25%   | n/a  |
| Educators                                  | n/a   | n/a   | n/a  |
| Non-Educators                              | n/a   | n/a   | n/a  |
| Inflation rate                             | 2.75%   | 2.75%   | 2.75%  |
| Discount rate                              | 7.25%   | 7.25%   | 7.25%  |
| Mortality rates:                           |   |   |  |
| Actives                                    | 100% of Pub-2010 Safety Employee Table, Amount-weighted, projected generationally with Scale MP-2020        | 100% of Pub-2010 Safety Employee Table, Amount-weighted, projected generationally with Scale MP-2020        | n/a  |
| Retired healthy males                      | 98% of Pub-2010 Safety Retiree Male Table, Amount-weighted, projected generationally with Scale MP-2020     | 98% of Pub-2010 Safety Retiree Male Table, Amount-weighted, projected generationally with Scale MP-2020     | 100% of Pub-2010 General Retiree Table, Above-median, amount weighted, Projected generationally with Scale MP-2020 |
| Retired healthy females                    | 99% of Pub-2010 Safety Retiree Female Table, Amount-weighted, projected generationally with Scale MP-2020   | 99% of Pub-2010 Safety Retiree Female Table, Amount-weighted, projected generationally with Scale MP-2020   | 100% of Pub-2010 General Retiree Table, Above-median, amount weighted, Projected generationally with Scale MP-2020 |
| Disabled males                             | 124% of Pub-2010 Safety Disabled Male Table, Amount-weighted, projected generationally with Scale MP-2020   | 124% of Pub-2010 Safety Disabled Male Table, Amount-weighted, projected generationally with Scale MP-2020   | 100% of Pub-2010 General Teachers Disabled Table, Amount weighted, Projected generationally with Scale MP-2020     |
| Disabled females                           | 100% of Pub-2010 Safety Disabled Female Table, Amount-weighted, projected generationally with Scale MP-2020 | 100% of Pub-2010 Safety Disabled Female Table, Amount-weighted, projected generationally with Scale MP-2020 | 100% of Pub-2010 General Teachers Disabled Table, Amount weighted, Projected generationally with Scale MP-2020     |
| Withdrawal rates:                          |   |   |  |
| State                                      | 0.28% - 6.84%   | n/a   | n/a  |
| Nonstate                                   | n/a   | 4.93% - 12.32%  | n/a  |
| Educators                                  | n/a   | n/a   | n/a  |
| Non-Educators                              | n/a   | n/a   | n/a  |
| Disability rates                           | 0.03% - 0.40%   | 0.03% - 0.40%   | n/a  |
| Retirement rates                           | 20% - 100%  | 16% - 100%  | 5% - 100%  |
| Date range in most recent experience study | 2015 - 2020   | 2015 - 2020   | 2015 - 2020  |

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**3 - ACTUARIAL INFORMATION - DEFINED BENEFIT PLANS (Continued)**

Actuarial Assumptions and Methods (continued)

|  | EMSRS   | MPFRS   | NRPORS  |
|--|---|---|---|
| Actuarial cost method                      | Individual entry age normal cost with level percentage of payroll   | Individual entry age normal cost with level percentage of payroll   | Individual entry age normal cost with level percentage of payroll   |
| Asset valuation method                     | Fair value  | Fair value  | Fair value  |
| Amortization method                        | Level dollar, fixed period  | Level dollar, fixed period  | Level dollar, fixed period  |
| Amortization period                        | Through Fiscal Year 2038  | n/a   | n/a   |
| Actuarial assumptions:                     |   |   |   |
| Investment rate of return                  | 7.25%   | 7.25%   | 7.25%   |
| Projected salary increases:                |   |   |   |
| State                                      | n/a   | n/a   | 4.25% - 5.75%   |
| Nonstate                                   | 3.00% - 5.00%   | 3.25% - 4.75%   | n/a   |
| Educators                                  | n/a   | n/a   | n/a   |
| Non-Educators                              | n/a   | n/a   | n/a   |
| Inflation rate                             | 2.75%   | 2.75%   | 2.75%   |
| Discount rate                              | 7.25%   | 7.25%   | 7.25%   |
| Mortality rates:                           |   |   |   |
| Actives                                    | 100% of Pub-2010 Safety Employee Table, Amount-weighted, projected generationally with Scale MP-2020        | 100% of Pub-2010 Safety Employee Table, Amount-weighted, projected generationally with Scale MP-2020        | 100% of Pub-2010 Safety Employee Table, Amount-weighted, projected generationally with Scale MP-2020        |
| Retired healthy males                      | 98% of Pub-2010 Safety Retiree Male Table, Amount-weighted, projected generationally with Scale MP-2020     | 98% of Pub-2010 Safety Retiree Male Table, Amount-weighted, projected generationally with Scale MP-2020     | 98% of Pub-2010 Safety Retiree Male Table, Amount-weighted, projected generationally with Scale MP-2020     |
| Retired healthy females                    | 99% of Pub-2010 Safety Retiree Female Table, Amount-weighted, projected generationally with Scale MP-2020   | 99% of Pub-2010 Safety Retiree Female Table, Amount-weighted, projected generationally with Scale MP-2020   | 99% of Pub-2010 Safety Retiree Female Table, Amount-weighted, projected generationally with Scale MP-2020   |
| Disabled males                             | 124% of Pub-2010 Safety Disabled Male Table, Amount-weighted, projected generationally with Scale MP-2020   | 124% of Pub-2010 Safety Disabled Male Table, Amount-weighted, projected generationally with Scale MP-2020   | 124% of Pub-2010 Safety Disabled Male Table, Amount-weighted, projected generationally with Scale MP-2020   |
| Disabled females                           | 100% of Pub-2010 Safety Disabled Female Table, Amount-weighted, projected generationally with Scale MP-2020 | 100% of Pub-2010 Safety Disabled Female Table, Amount-weighted, projected generationally with Scale MP-2020 | 100% of Pub-2010 Safety Disabled Female Table, Amount-weighted, projected generationally with Scale MP-2020 |
| Withdrawal rates:                          |   |   |   |
| State                                      | n/a   | n/a   | 2.00% - 6.16%   |
| Nonstate                                   | 6.00% - 28.00%  | 3.00% - 21.00%  | n/a   |
| Educators                                  | n/a   | n/a   | n/a   |
| Non-Educators                              | n/a   | n/a   | n/a   |
| Disability rates                           | 0.03% - 0.40%   | 0.03% - 0.40%   | 0.03% - 0.40%   |
| Retirement rates                           | 25% - 100%  | 25% - 100%  | 20% - 100%  |
| Date range in most recent experience study | 2015 - 2020   | 2015 - 2020   | 2015 - 2020   |

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

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**4 - FAIR VALUE MEASUREMENTS**

The framework for measuring fair value provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy under are described as follows:

|         |  |
|---------|--|
| Level 1 | Inputs to the valuation methodology are unadjusted quoted prices in active markets for identical assets or liabilities that the Board can access at the measurement date.  |
| Level 2 | Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly, such as: quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets or liabilities in inactive markets; inputs other than quoted prices that are observable for the asset or liability; inputs that are derived principally from or corroborated by observable market data by correlation or other means. |
| Level 3 | Inputs to the valuation methodology are unobservable and significant to the fair value measurement.  |

The asset or liabilities fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques maximize the use of observable inputs and minimize the use of unobservable inputs.

The investment risks for the pooled investments in which the Board participates are described in Note 5. Investments are administered by the WVIMB, for the Board administered defined benefit retirement systems, and the WVIMB is responsible for setting investment risk policies.

Following is a description of the valuation methodologies used for assets measured at fair value.

*Mutual funds:* Valued at the daily closing price as reported by the fund. Mutual funds held by the System are open-end mutual funds that are registered with the Securities and Exchange Commission. These funds are required to publish their daily net asset value (NAV) and to transact at that price. The mutual funds held by the System are deemed to be actively traded.

*Collective investment trusts:* Valued at the NAV of units of a collective trust. The NAV, as provided by the trustee, is used as a practical expedient to estimate fair value. The NAV is based on the fair value of the underlying investments held by the fund less its liabilities. This practical expedient is not used when it is determined to be probable that the fund will sell the investment for an amount different than the reported NAV. Participant transactions (purchases and sales) may occur daily. Were the Plan to initiate a full redemption of the collective trust, the investment adviser reserves the right to temporarily delay withdrawal from the trust in order to ensure that securities liquidations will be carried out in an orderly business manner.

*WVIMB Investment Pools:* Valued at the NAV of units of an investment pool. The NAV, as provided by the trustee, is used as a practical expedient to estimate fair value. The NAV is based on the fair value of the underlying investments held by the fund less its liabilities. This practical expedient is not used when it is determined to be probable that the fund will sell the investment for an amount different than the reported NAV. Participant transactions (purchases and sales) may occur daily. Refer to the fair value measurement not disclosures within the WVIMB's annual financial statements for the underlying investments within the fair value hierarchy.

**West Virginia Consolidated Public Retirement Board  
Notes to the Financial Statements (Continued)**

**4 - FAIR VALUE MEASUREMENTS (Continued)**

The following is a summary of the investments held by WVIMB for each plan as of June 30, 2023 (in thousands) which are all measured at NAV and not within the fair value hierarchy:

|                         | PERS        | TRS         | SPDDRS     | SPRS       | DSRS       | JRS        | EMSRS      | MPFRS     | NRPORS    | Unfunded Commitments | Redemption Frequency (If Currently Eligible) | Redemption Notice Period |
|-------------------------|-------------|-------------|------------|------------|------------|------------|------------|-----------|-----------|----------------------|--|--------------------------|
| Portable Alpha          | \$2,068,608 | \$2,272,242 | \$192,747  | \$ 78,430  | \$ 77,535  | \$ 68,412  | \$ 30,062  | \$ 8,364  | \$ 6,752  | N/A                  | Daily  | Daily                    |
| Non-Large Cap           |             |             |            |            |            |            |            |           |           |                      |  |                          |
| Domestic equity         | 881,971     | 422,941     | 35,802     | 14,284     | 14,251     | 12,590     | 5,510      | 1,492     | 1,222     | N/A                  | Daily  | Daily                    |
| International qualified | 537,495     | 563,054     | 50,016     | 20,358     | 20,179     | 17,801     | 7,826      | 2,136     | 1,745     | N/A                  | Daily  | Daily                    |
| International equity    | 1,010,684   | 1,116,899   | 92,655     | 37,984     | 37,765     | 33,290     | 14,622     | 3,945     | 3,251     | N/A                  | Daily  | Daily                    |
| Private markets         | 2,348,329   | 2,592,082   | 218,529    | 88,904     | 88,136     | 17,750     | 34,182     | 9,025     | 7,624     | N/A                  | Daily  | Daily                    |
| Total return            |             |             |            |            |            |            |            |           |           |                      |  |                          |
| fixed income            | 619,106     | 979,332     | 56,514     | 23,792     | 23,401     | 20,504     | 9,079      | 2,481     | 2,018     | N/A                  | Daily  | Daily                    |
| Core fixed income       | 582,903     | 638,250     | 53,092     | 23,125     | 22,507     | 19,752     | 8,829      | 2,451     | 1,960     | N/A                  | Daily  | Daily                    |
| Hedge fund              | 845,127     | 932,908     | 78,649     | 32,003     | 31,726     | 17,982     | 12,306     | 3,057     | 2,744     | N/A                  | Daily  | Daily                    |
| Short-term              |             |             |            |            |            |            |            |           |           |                      |  |                          |
| fixed income            | 9,213       | 71,694      | 436        | 1,204      | 539        | 969        | 2,764      | 1,294     | 326       | N/A                  | Daily  | Daily                    |
| Total investments (a)   | \$8,398,436 | \$9,319,702 | \$ 778,440 | \$ 320,093 | \$ 316,039 | \$ 278,545 | \$ 125,180 | \$ 34,945 | \$ 27,642 |                      |  |                          |

(a) - see note 5 for additional information regarding the objective of each pool, commitments, and relevant risks.

The following table sets forth by level, within the fair value hierarchy, the TDC plan's assets at fair value as of June 30, 2023. Classification within the fair value hierarchy table is based on the lowest level of any input that is significant to the fair value measurement (in thousands).

|  | Fair Value at June 30, 2023 |            |         |         |
|--|-----------------------------|------------|---------|---------|
|  | Total                       | Level 1    | Level 2 | Level 3 |
| Investments in the fair value hierarchy: |                             |            |         |         |
| Mutual funds                             | \$ 359,698                  | \$ 359,698 | \$ -    | \$ -    |
| Total assets in the fair value hierarchy | \$ 359,698                  | \$ 359,698 | \$ -    | \$ -    |
| Investments measured at net asset value: |                             |            |         |         |
| Collective investment trusts             | 122,774                     |            |         |         |
| Investments at fair value                | \$ 482,472                  |            |         |         |

**INVESTMENTS MEASURED USING NAV PER SHARE AS PRACTICAL EXPEDIENT**

The following table summarizes investments for which fair value is measured using the net asset value per share practical expedient as of June 30, 2023 (in thousands). There are no participant redemption restrictions for these investments.

|                                       | Fair Value | Unfunded Commitments | Redemption Frequency (If Currently Eligible) | Redemption Notice Period |
|---------------------------------------|------------|----------------------|--|--------------------------|
| Collective investment trusts funds(b) | \$ 122,774 | n/a                  | Daily  | Daily                    |

(b) The object of each fund is to seek capital appreciation and income.

**5 - INVESTMENTS**

The Board has adopted investment guidelines that are consistent with those specified in the West Virginia Code. Those guidelines authorize the Board to invest with WVIMB in obligations of the United States and certain of its agencies, certificates of deposit, direct and general obligations of states, repurchase agreements relating to certain securities, equity securities, real estate, and guaranteed investment contracts. Plan assets of the defined benefit plans are invested by the WVIMB. The WVIMB invests plan assets in accordance with West Virginia Code and policies established by the WVIMB. Individual defined benefit plan assets are invested by the WVIMB in the various WVIMB pools. Investments are managed by a third-party administrator as the trustee for the TDCRS.



**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**5 - INVESTMENTS (Continued)**

The following information presents the disclosures for each pool as of June 30, 2023. For more information see WVIMB's website at [www.wvimb.org](http://www.wvimb.org). The investment risks for the various investments in which the plans participate are described below:

Portable Alpha

The Pool's objective is to exceed, net of external investment management fees, the S&P 500 Index over three- to five-year periods. The Pool has three main components: 1) a domestic large capitalization equity beta replication manager and the related margin account, 2) a portfolio of alternative risk premia funds, and 3) a domestic large capitalization equity index manager. Russell Investments Implementation Services, LLC (Russell) is the equity beta replication manager. Russell primarily trades S&P 500 futures contracts and invests the margin account in fixed income securities and a money market mutual fund. Albourne America, LLC has been retained by the IMB to provide consulting services for the portfolio of alternative risk premia funds. The remainder of the Pool's assets are invested in the BlackRock Equity Index Fund B (BlackRock). BlackRock uses a replication indexing approach to achieve investment results that correspond generally to the price and yield performance, before fees and expenses, of the S&P 500 Stock Index.

*Credit Risk*

The Pool is exposed to credit risk from its fixed income investments and money market mutual fund investment. The WVIMB limits the exposure to credit risk in the Pool by requiring securities purchased to have a minimum long-term rating of BBB (investment grade) and/or a short-term rating of A-2 (Tier-II) as defined by a nationally recognized statistical rating organization. The WVIMB reviews available ratings from Standard & Poor's, Moody's, and Fitch, and reports the rating indicative of the greatest degree of risk

*Concentration of Credit Risk*

The Pool is restricted from investing more than 5 percent of the value of the Pool in any one company. At June 30, 2023, the Pool was in compliance with this restriction and is not exposed to concentration of credit risk.

*Custodial Credit Risk*

At June 30, 2023, the Pool held no securities that were subject to custodial credit risk. Investments in the commingled equity fund and money market mutual fund are not subject to custodial credit risk. All remaining securities are held by the WVIMB's custodian in the name of the WVIMB.

*Interest Rate Risk*

The Pool is exposed to interest rate risk from its fixed income investments and money market mutual fund investment. As of June 30, 2023, the money market mutual fund has a weighted average maturity (WAM) of 12 days.

*Participation Schedule*

This pool is participated in by entities other than the retirement systems administered by the WVCPRB. The disclosures for this pool represent the pool, as a whole. The following schedule provides the values of the WVCPRB's administered retirement systems' participation in the Pool at June 30, 2023 (in thousands):

| Participant  | Account Value | Percentage of Total |
|--|---------------|---------------------|
| Public Employees' Retirement System                            | \$ 2,063,608  | 38.97%              |
| Teachers' Retirement System                                    | 2,272,242     | 42.91%              |
| State Police Death, Disability, and Retirement System          | 192,747       | 3.64%               |
| State Police Retirement System                                 | 78,430        | 1.48%               |
| Deputy Sheriff's Retirement System                             | 77,535        | 1.46%               |
| Judges' Retirement System                                      | 68,412        | 1.29%               |
| Emergency Medical Services Retirement System                   | 30,062        | 0.57%               |
| Municipal Police Officers' and Firefighters' Retirement System | 8,364         | 0.16%               |
| Natural Resources Police Officers's Retirement System          | 6,752         | 0.13%               |
| Total of Retirement Systems                                    | 4,798,152     | 90.61%              |
| Other Participants   | 497,484       | 9.39%               |
| Total  | \$ 5,295,636  | 100.00%             |

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**5 - INVESTMENTS (Continued)**

Non-Large Cap Domestic Equity

The Pool's objective is to exceed, net of external investment management fees, the Russell 2500 Index over three- to five-year periods. Assets were managed by Cooper Creek Partners Management, LLC and Westfield Capital Management, LLC.

*Credit Risk*

The Pool's money market mutual fund investment and the Cash Collateral Account are exposed to credit risk. The money market mutual fund has the highest credit rating. The Cash Collateral Account is not rated.

*Concentration of Credit Risk*

The Pool is restricted from investing more than 5 percent of the value of the Pool in any one company. At June 30, 2023, the Pool was in compliance with this restriction and is not exposed to concentration of credit risk.

*Custodial Credit Risk*

At June 30, 2023, the Pool held no securities that were subject to custodial credit risk. Securities on loan are collateralized to a minimum of 102 percent, and the collateral is held by the WVIMB's custodian in the name of the WVIMB. The money market mutual fund, the Cash Collateral Account, and the comingled equity fund are not subject to custodial credit risk. All remaining securities are held by the WVIMB's custodian in the name of the WVIMB.

*Interest Rate Risk*

The Pool is exposed to interest rate risk from its money market mutual fund investment and from the Cash Collateral Account. As of June 30, 2023, the money market mutual fund's weighted average maturity (WAM) was 12 days. Except for repurchase agreements that can have up to 95 days to maturity, investments in the Cash Collateral Account are limited to overnight investments. As of June 30, 2023, the WAM for the Cash Collateral Account was 3 days.

*Foreign Currency Risk*

At times during the year the Pool held securities and cash denominated in foreign currencies, but at June 30, 2023, there was no exposure to foreign currency risk.

*Participation Schedule*

This pool is participated in by entities other than the retirement systems administered by the WVCPRB. The disclosures for this pool represent the pool, as a whole. The following schedule provides the values of the WVCPRB's administered retirement systems' participation in the Pool at June 30, 2023 (in thousands):

| Participant  | Account Value | Percentage of Total |
|--|---------------|---------------------|
| Public Employees' Retirement System                            | \$ 381,971    | 36.72%              |
| Teachers' Retirement System                                    | 422,941       | 40.66%              |
| State Police Death, Disability, and Retirement System          | 35,802        | 3.44%               |
| State Police Retirement System                                 | 14,294        | 1.37%               |
| Deputy Sheriff's Retirement System                             | 14,251        | 1.37%               |
| Judges' Retirement System                                      | 12,590        | 1.21%               |
| Emergency Medical Services Retirement System                   | 5,510         | 0.53%               |
| Municipal Police Officers' and Firefighters' Retirement System | 1,492         | 0.14%               |
| Natural Resources Police Officers's Retirement System          | 1,222         | 0.12%               |
| Total of Retirement Systems                                    | 890,073       | 85.57%              |
| Other Participants   | 150,055       | 14.43%              |
| Total  | \$ 1,040,128  | 100.00%             |

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**5 - INVESTMENTS (Continued)**

International Qualified

The Pool invests in The Silchester International Investors International Value Equity Group Trust (Silchester). The Pool's objective is to produce investment returns that exceed the Morgan Stanley Capital International's Europe Australasia Far East Index (MSCI EAFE) by 200 basis points on an annualized basis over three- to five-year periods, net of external investment management fees. Only "qualified participants" (as defined by the *Internal Revenue Code*) may invest in the Pool. Silchester invests in a diversified portfolio of equity securities of companies incorporated in any country other than the United States, with limited exposure to emerging markets and no unreasonable concentration exposure to any single issuer or country.

The Pool invests in a commingled equity fund that invests in equities denominated in foreign currencies. The value of this investment at June 30, 2023, was \$1,263,171. This investment, although denominated in U.S. dollars, is exposed to foreign currency risk through the underlying investments. The Pool is not exposed to credit risk, interest rate risk, custodial credit risk, or concentration of credit risk.

*Participation Schedule*

This pool is participated in by entities other than the retirement systems administered by the WVCPRB. The disclosures for this pool represent the pool, as a whole. The following schedule provides the values of the WVCPRB's administered retirement systems' participation in the Pool at June 30, 2023 (in thousands):

| Participant  | Account Value | Percentage of Total |
|--|---------------|---------------------|
| Public Employees' Retirement System                            | \$ 537,495    | 42.55%              |
| Teachers' Retirement System                                    | 593,354       | 46.97%              |
| State Police Death, Disability, and Retirement System          | 50,016        | 3.96%               |
| State Police Retirement System                                 | 20,358        | 1.61%               |
| Deputy Sheriff's Retirement System                             | 20,179        | 1.60%               |
| Judges' Retirement System                                      | 17,801        | 1.41%               |
| Emergency Medical Services Retirement System                   | 7,826         | 0.62%               |
| Municipal Police Officers' and Firefighters' Retirement System | 2,136         | 0.17%               |
| Natural Resources Police Officers's Retirement System          | 1,745         | 0.14%               |
| Total of Retirement Systems                                    | 1,250,910     | 99.03%              |
| Other Participants   | 12,261        | 0.97%               |
| Total  | \$ 1,263,171  | 100.00%             |

International Equity

The Pool invests in the equities of international companies. The objective of the Pool is to outperform the international equity market as measured by the Morgan Stanley Capital International's All Country World Free Ex US Index over a full market cycle (three- to five-years), net of external investment management fees. Assets were managed by Acadian Asset Management, LLC, Axiom International Investors, LLC (Axiom), LSV Asset Management, and Oberweis Asset Management, Inc. for the entire fiscal year. Assets were managed by Brandes Investment Partners, L.P. (Brandes) from July 1, 2021, until May 31, 2022. On June 1, 2022, Russell Investments Implementation Services, LLC (Russell) was hired on a transition basis, with the purpose of trading the Brandes portfolio in line with the target portfolio which will be managed by Numeric Investors LLC (Numeric). In June 2022, the IMB finalized the contract with Numeric, which has an effective date of July 1, 2022. Assets were managed by Allianz Global Investors (Allianz) from July 1, 2021, until June 14, 2022, when the Allianz GI China A Shares LLC Commingled Equity Fund closed. Proceeds were split between the existing managers with emerging market mandates, specifically Axiom and Russell.

*Credit Risk*

The Pool's money market mutual fund investment and the Cash Collateral Account are exposed to credit risk. The money market mutual fund has the highest credit rating. The Cash Collateral Account is not rated.

*Concentration of Credit Risk*

The Pool is restricted from investing more than 5 percent of the value of the Pool in any one company. At June 30, 2023, the Pool was in compliance with this restriction and is not exposed to concentration of credit risk.

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**5 - INVESTMENTS (Continued)**

International Equity (continued)

*Custodial Credit Risk*

At June 30, 2023, the Pool held no securities that were subject to custodial credit risk. Securities on loan are collateralized to a minimum of 102 percent for U.S. Dollar denominated loans and 105 percent for foreign denominated loans, and the collateral is held by the WVIMB's custodian in the name of the WVIMB. The money market mutual fund and the Cash Collateral Account are not subject to custodial credit risk. All remaining securities are held by the WVIMB's custodian in the name of the WVIMB.

*Interest Rate Risk*

The Pool is exposed to interest rate risk from its money market mutual fund investment and from the Cash Collateral Account. As of June 30, 2023, the money market mutual fund's weighted average maturity (WAM) was 12 days. Except for repurchase agreements that can have up to 95 days to maturity, investments in the Cash Collateral Account are limited to overnight investments. As of June 30, 2023, the WAM for the Cash Collateral Account was 3 days.

*Foreign Currency Risk*

The Pool has equity investments, cash, and foreign currency spot contracts that are exposed to foreign currency risks. The amounts at fair value (in U.S. dollars) of equity investments, cash, and foreign currency spot contracts as of June 30, 2023, are as follows (in thousands):

| Currency              | Equity Investments  | Cash             | Foreign Currency Spot Contracts | Total               |
|-----------------------|---------------------|------------------|---------------------------------|---------------------|
| Australian Dollar     | \$ 74,474           | \$ 40            | \$ -                            | \$ 74,514           |
| Brazil Real           | 90,245              | 855              | -                               | 91,100              |
| British Pound         | 183,367             | 969              | 7                               | 184,343             |
| Canadian Dollar       | 115,980             | 358              | -                               | 116,338             |
| Chilean Peso          | 2,296               | -                | -                               | 2,296               |
| Chinese Yuan Onshore  | -                   | 3                | -                               | 3                   |
| Chinese Yuan Offshore | 75,886              | 121              | (1)                             | 76,006              |
| Danish Krone          | 24,169              | 7                | -                               | 24,176              |
| Egyptian Pound        | 19                  | 4                | -                               | 23                  |
| Emirati Dirham        | 16,587              | 23               | -                               | 16,610              |
| Euro Currency Unit    | 382,739             | 706              | 1                               | 383,446             |
| Hong Kong Dollar      | 281,730             | 1,855            | -                               | 283,585             |
| Hungarian Forint      | 5,326               | 342              | -                               | 5,668               |
| Indian Rupee          | 138,619             | 54               | -                               | 138,673             |
| Indonesian Rupiah     | 39,173              | 84               | -                               | 39,257              |
| Israeli Shekel        | 2,761               | 47               | -                               | 2,808               |
| Japanese Yen          | 287,680             | 3,678            | 1                               | 291,359             |
| Kuwaiti Dinar         | 2,374               | 4                | -                               | 2,378               |
| Malaysian Ringgit     | 6,313               | 9                | -                               | 6,322               |
| Mexican Peso          | 38,024              | 129              | 2                               | 38,155              |
| New Taiwan Dollar     | 172,630             | 193              | -                               | 172,823             |
| New Zealand Dollar    | 34                  | -                | -                               | 34                  |
| Norwegian Krone       | 20,875              | 580              | -                               | 21,455              |
| Philippine Peso       | 4,357               | 17               | -                               | 4,374               |
| Polish Zloty          | 11,996              | -                | -                               | 11,996              |
| Russian Ruble         | -                   | 2,193            | -                               | 2,193               |
| Qatari Riyal          | 1,774               | -                | -                               | 1,774               |
| Saudi Arabian Riyal   | 34,136              | 39               | -                               | 34,175              |
| Singapore Dollar      | 14,854              | 167              | -                               | 15,021              |
| South African Rand    | 16,149              | 3                | -                               | 16,152              |
| South Korean Won      | 201,905             | 74               | (4)                             | 201,975             |
| Swedish Krona         | 55,008              | 148              | -                               | 55,156              |
| Swiss Franc           | 73,182              | 34               | 2                               | 73,218              |
| Thailand Baht         | 39,670              | 4                | (8)                             | 39,666              |
| Turkish Lira          | 10,002              | 43               | -                               | 10,045              |
| <b>Total</b>          | <b>\$ 2,424,334</b> | <b>\$ 12,783</b> | <b>\$ -</b>                     | <b>\$ 2,437,117</b> |

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**5 - INVESTMENTS (Continued)**

International Equity (continued)

This table excludes investments and cash held by the Pool that are denominated in U.S. dollars. The market value of the U.S. dollar denominated investments and cash is \$265,987.

*Participation Schedule*

This pool is participated in by entities other than the retirement systems administered by the WVCPRB. The disclosures for this pool represent the pool, as a whole. The following schedule provides the values of the WVCPRB's administered retirement systems' participation in the Pool at June 30, 2023 (in thousands):

| Participant  | Account Value | Percentage<br>of Total |
|--|---------------|------------------------|
| Public Employees' Retirement System                            | \$ 1,010,684  | 36.87%                 |
| Teachers' Retirement System                                    | 1,116,899     | 40.74%                 |
| State Police Death, Disability, and Retirement System          | 92,655        | 3.38%                  |
| State Police Retirement System                                 | 37,984        | 1.39%                  |
| Deputy Sheriff's Retirement System                             | 37,765        | 1.38%                  |
| Judges' Retirement System                                      | 33,290        | 1.21%                  |
| Emergency Medical Services Retirement System                   | 14,622        | 0.53%                  |
| Municipal Police Officers' and Firefighters' Retirement System | 3,945         | 0.14%                  |
| Natural Resources Police Officers's Retirement System          | 3,251         | 0.12%                  |
| Total of Retirement Systems                                    | 2,351,095     | 85.76%                 |
| Other Participants   | 390,236       | 14.24%                 |
| Total  | \$ 2,741,331  | 100.00%                |

Short-Term Fixed Income

The main objective of the Pool is to maintain sufficient liquidity to meet the daily disbursements requested by participants and to invest any contributions until the time the money is transferred to other WVIMB operated investment pools without sustaining capital losses while earning a small return above inflation. The Pool's benchmark, net of external investment management fees, is the FTSE 3 Month US T-Bill Index. JP Morgan Investment Advisors, Inc. manages the Pool.

*Credit Risk*

The WVIMB limits the exposure to credit risk in the Pool by requiring all corporate bonds to be rated AA or higher. Commercial paper must be rated A-1 by Standard & Poor's and P-1 by Moody's. Additionally, the Pool must have at least 10 percent of its assets in United States Treasury issues. Repurchase agreements are collateralized by United States Treasury bonds. The WVIMB reviews available ratings from Standard & Poor's, Moody's, and Fitch, and reports the rating indicative of the greatest degree of risk. All of the Pool's investments had the highest credit rating as of June 30, 2023.

*Concentration of Credit Risk*

The Pool is restricted from investing more than 5 percent of the value of the Pool in any one corporate name. At June 30, 2023, the Pool was in compliance with this restriction and is not exposed to concentration of credit risk.

*Custodial Credit Risk*

At June 30, 2023, the Pool held no investments that were subject to custodial credit risk. Repurchase agreements are collateralized at 102 percent and the collateral is held in the name of the WVIMB. All remaining investments are held by the WVIMB's custodian in the name of the WVIMB.

**West Virginia Consolidated Public Retirement Board  
Notes to the Financial Statements (Continued)**

**5 - INVESTMENTS (Continued)**

Short-Term Fixed Income (continued)

*Interest Rate Risk*

The Pool is exposed to interest rate risk from its fixed income investments. The WVIMB monitors interest rate risk of the Pool by limiting the weighted average maturity (WAM) of the investments of the Pool to 60 days. The maturity of floating rate notes is assumed to be the next interest rate reset date. The following table provides the WAM for the different asset types in the Pool as of June 30, 2023:

| Investment Type              | WAM<br>(days) | Carrying<br>Value |
|------------------------------|---------------|-------------------|
| Repurchase agreements        | 3             | \$ 22,771         |
| U.S. Government agency bonds | 8             | 94,933            |
| U.S. Treasury bills          | 13            | 68,905            |
| <b>Total investments</b>     | <b>9</b>      | <b>\$ 186,609</b> |

*Foreign currency risk*

The Pool has no investments that are subject to foreign currency risk.

*Participation Schedule*

This pool is participated in by entities other than the retirement systems administered by the WVCPRB. The disclosures for this pool represent the pool, as a whole. The following schedule provides the values of the WVCPRB's administered retirement systems' participation in the Pool at June 30, 2023 (in thousands):

| Participant  | Account Value     | Percentage<br>of Total |
|--|-------------------|------------------------|
| Public Employees' Retirement System                            | \$ 9,213          | 4.94%                  |
| Teachers' Retirement System                                    | 71,694            | 38.42%                 |
| State Police Death, Disability, and Retirement System          | 436               | 0.23%                  |
| State Police Retirement System                                 | 1,204             | 0.65%                  |
| Deputy Sheriff's Retirement System                             | 539               | 0.29%                  |
| Judges' Retirement System                                      | 369               | 0.20%                  |
| Emergency Medical Services Retirement System                   | 2,764             | 1.48%                  |
| Municipal Police Officers' and Firefighters' Retirement System | 1,394             | 0.75%                  |
| Natural Resources Police Officers's Retirement System          | 326               | 0.17%                  |
| <b>Total of Retirement Systems</b>                             | <b>87,939</b>     | <b>47.13%</b>          |
| <b>Other Participants</b>                                      | <b>98,659</b>     | <b>52.87%</b>          |
| <b>Total</b>   | <b>\$ 186,598</b> | <b>100.00%</b>         |

5 -

Total Return Fixed Income

The main objective of the Pool is to generate investment income, provide stability, and enhance diversification, but not at the expense of total return. The Pool's investment objective, net of external investment management fees, is to outperform the Bloomberg Barclays U.S. Universal Bond Index over three- to five- year periods. Dodge & Cox, Franklin Templeton Investments, and Western Asset Management Company manage the Pool.

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**INVESTMENTS (Continued)**

Total Return Fixed Income (continued)

*Credit Risk*

The Pool is exposed to credit risk from its fixed income investments, money market mutual fund investment, and Cash Collateral Account investment. The WVIMB limits the exposure to credit risk in the Pool by maintaining at least an average rating of BBB (investment grade) and/or a short-term rating of A-2 (Tier II) as defined by a nationally recognized statistical rating organization. The WVIMB reviews available ratings from Standard & Poor's, Moody's, and Fitch, and reports the rating indicative of the greatest degree of risk. The Pool holds some securities that have not received a rating from the aforementioned rating organizations. These securities have been listed as not rated in the table below. The absence or lack of a rating does not necessarily indicate a greater degree of risk. The money market mutual fund has the highest credit rating. The Cash Collateral Account is not rated. The following table provides credit ratings for the Pool's fixed income investments as of June 30, 2023 (in thousands):

| Rating                                | Fair Value          |
|---------------------------------------|---------------------|
| <i>Long-term</i>                      |                     |
| AAA                                   | \$ 32,765           |
| AA                                    | 917,161             |
| A                                     | 130,017             |
| BBB                                   | 610,127             |
| BB                                    | 329,773             |
| B                                     | 125,669             |
| CCC                                   | 25,396              |
| CC                                    | 8,310               |
| D                                     | 2,223               |
| Withdrawn                             | 16,811              |
| <i>Short-term</i>                     |                     |
| A-1                                   | 4,632               |
| Not rated                             | 49,260              |
| <b>Total fixed income investments</b> | <b>\$ 2,252,144</b> |

*Concentration of Credit Risk*

The Pool is restricted from investing more than 5 percent of the value of the Pool in any one corporate name. At June 30, 2023, the Pool was in compliance with this restriction and is not exposed to concentration of credit risk.

*Custodial Credit Risk*

At June 30, 2023, except for posted collateral on cleared derivatives and over-the-counter derivative instruments, the Pool held no securities that were subject to custodial credit risk. Repurchase agreements, when held, are collateralized to a minimum of 102 percent and the collateral is held in the name of the WVIMB. Securities on loan are collateralized to a minimum of 102 percent for U.S. Dollar denominated loans and 105 percent for foreign denominated loans, and the collateral is held by the WVIMB's custodian in the name of the WVIMB. Investments in commingled debt funds, money market mutual funds, and the Cash Collateral Account are not subject to custodial credit risk. All remaining securities are held by the WVIMB's custodian in the name of the WVIMB.

*Interest Rate Risk*

The Pool is exposed to interest rate risk from its fixed income investments, money market mutual fund investment, and Cash Collateral Account investment. As of June 30, 2023, the money market mutual fund has a weighted average maturity (WAM) of 12 days. Except for repurchase agreements that can have up to 95 days to maturity, investments in the Cash Collateral Account are limited to overnight investments. As of June 30, 2023, the WAM for the Cash Collateral Account was 3 days.

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**INVESTMENTS (Continued)**

Total Return Fixed Income (continued)

The WVIMB monitors interest rate risk of the Pool by evaluating the effective duration of the investments in the Pool. Effective duration is a method of disclosing interest rate risk that measures the expected change in the price of a fixed income security for a 1 percent change in interest rates. The effective duration calculation takes into account the most likely timing of variable cash flows, which is particularly useful for measuring interest rate risk of callable bonds, commercial and residential mortgage-backed securities, asset-backed securities, and collateralized mortgage obligations. The following table provides the weighted average effective duration for the various asset types in the Pool as of June 30, 2023 (in thousands):

| Investment Type                              | Fair Value   | Effective Duration (years) |
|--|--------------|----------------------------|
| Bank loans                                   | \$ 2,661     | 2.0                        |
| Commingled debt funds                        | 155,511      | 3.6                        |
| Corporate asset-backed issues                | 53,142       | 1.3                        |
| Corporate CMO                                | 68,964       | 1.2                        |
| Foreign asset-backed issues                  | 70,488       | (0.2)                      |
| Foreign corporate bonds                      | 320,507      | 4.7                        |
| Foreign government bonds                     | 252,975      | 5.5                        |
| Municipal bonds                              | 20,121       | 7.6                        |
| Repurchase Agreement                         | 4,300        | 0.0                        |
| U.S. corporate bonds                         | 441,684      | 5.6                        |
| U.S. Government agency bonds                 | 3,359        | 0.1                        |
| U.S. Government agency CMO                   | 83,390       | 0.8                        |
| U.S. Government agency CMO interest-only     | 3,697        | 2.6                        |
| U.S. Government agency MBS                   | 460,235      | 5.8                        |
| U. S. Government agency TBAs                 | 35,738       | 6.4                        |
| U.S. Treasury issues                         | 263,621      | 14.5                       |
| U.S. Treasury inflation protected securities | 11,751       | 8.8                        |
| Total fixed income investments               | \$ 2,252,144 |                            |

The Pool invests in commercial and residential mortgage-backed securities, asset-backed securities, and collateralized mortgage obligations. The cash flows from these securities are based on the payment of the underlying collateral. The effective duration and yield to maturity of these securities are dependent on estimated prepayment assumptions that consider historical experience, market conditions and other criteria. Actual prepayments may vary with changes in interest rates. Rising interest rates often result in a slower rate of prepayments while declining rates tend to lead to faster prepayments. As a result, the fair values of these securities are highly sensitive to interest rate changes. At June 30, 2023, the Pool held \$775,654 of these securities. This represents approximately 34 percent of the value of the Pool's fixed income securities.

*Foreign Currency Risk*

The Pool has foreign fixed income investments, foreign equity investments, and cash that is denominated in foreign currencies and exposed to foreign currency risk. Foreign denominated derivative investments are disclosed in Note 4. Additionally, the Pool has indirect exposure to foreign currency risk through its ownership interests in certain of the commingled debt funds. Approximately \$35,599, or 23 percent, of the commingled debt funds hold substantially all of their investments in securities denominated in foreign currencies. This represents approximately 2 percent of the value of the Pool's fixed income securities.



West Virginia Consolidated Public Retirement Board  
Notes to the Financial Statements (Continued)

INVESTMENTS (Continued)

Total Return Fixed Income (continued)

The amounts at fair value (in U.S. dollars) of investments and cash denominated in foreign currencies as of June 30, 2023, are as follows (in thousands):

| Currency                              | Foreign Fixed Income | Common Stock | Cash      | Cash Due To/From Broker | Total      |
|---------------------------------------|----------------------|--------------|-----------|-------------------------|------------|
| Argentine Peso                        | \$ 57                | \$ -         | \$ 15     | -                       | 72         |
| Australian Dollar                     | -                    | -            | 355       | 929                     | 1,284      |
| Brazilian Real                        | 64,585               | -            | 757       | -                       | 65,342     |
| British Pound                         | -                    | 620          | 2,086     | (40)                    | 2,666      |
| Canadian Dollar                       | -                    | -            | 1,090     | -                       | 1,090      |
| Colombian Peso                        | 3,964                | -            | -         | -                       | 3,964      |
| Dominican Peso                        | 3,849                | -            | -         | -                       | 3,849      |
| Euro Currency Unit                    | 23,734               | -            | 1,035     | 225                     | 24,994     |
| Georgia Lari                          | 769                  | -            | -         | -                       | 769        |
| Hungarian Forint                      | 3,227                | -            | -         | -                       | 3,227      |
| Indonesian Rupiah                     | 22,386               | -            | 2,163     | -                       | 24,549     |
| Japanese Yen                          | 2,717                | -            | 1,376     | (1,480)                 | 2,613      |
| Kazakhstani Tenge                     | 3,517                | -            | -         | -                       | 3,517      |
| Mexican Peso                          | 43,251               | -            | 1,631     | 1,650                   | 46,532     |
| New Zealand Dollar                    | -                    | -            | 728       | -                       | 728        |
| Peruvian Nuevo Sol                    | 2,486                | -            | -         | -                       | 2,486      |
| Polish Zioty                          | 3,037                | -            | -         | -                       | 3,037      |
| Russian Ruble                         | 5,586                | -            | 772       | -                       | 6,358      |
| South African Rand                    | 9,288                | -            | 1,306     | -                       | 10,594     |
| Swedish Krona                         | -                    | -            | 405       | -                       | 405        |
| Uruguayan Peso                        | 4,933                | -            | -         | -                       | 4,933      |
| Uzbekistan Som                        | 3,202                | -            | -         | -                       | 3,202      |
| Total foreign denominated investments | \$ 200,588           | \$ 620       | \$ 13,719 | \$ 1,284                | \$ 216,211 |

This table excludes investments and cash held by the Pool that are denominated in U.S. dollars. The fair value of the U.S. dollar denominated investments and cash was \$455,964,000.

Participation Schedule

This pool is participated in by entities other than the retirement systems administered by the WVCPRB. The disclosures for this pool represent the pool, as a whole. The following schedule provides the values of the WVCPRB's administered retirement systems' participation in the Pool at June 30, 2023 (in thousands):

| Participant  | Account Value | Percentage of Total |
|--|---------------|---------------------|
| Public Employees' Retirement System                            | \$ 619,106    | 27.08%              |
| Teachers' Retirement System                                    | 679,332       | 29.72%              |
| State Police Death, Disability, and Retirement System          | 56,514        | 2.47%               |
| State Police Retirement System                                 | 23,792        | 1.04%               |
| Deputy Sheriff's Retirement System                             | 23,401        | 1.02%               |
| Judges' Retirement System                                      | 20,594        | 0.90%               |
| Emergency Medical Services Retirement System                   | 9,079         | 0.40%               |
| Municipal Police Officers' and Firefighters' Retirement System | 2,481         | 0.11%               |
| Natural Resources Police Officers's Retirement System          | 2,018         | 0.09%               |
| Total of Retirement Systems                                    | 1,436,317     | 62.83%              |
| Other Participants   | 849,811       | 37.17%              |
| Total  | \$ 2,286,128  | 100.00%             |

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**INVESTMENTS (Continued)**

Core Fixed Income

The main objective of the Pool is to generate investment income, provide stability, and enhance diversification but not at the expense of total return. The Pool's investment objective is to outperform the Bloomberg Barclays U.S. Aggregate Bond Index over three- to five-year periods, net of external investment management fees. JP Morgan Investment Advisors, Inc. manages this Pool.

*Credit Risk*

The Pool is exposed to credit risk from its fixed income investments, money market mutual fund investment, and Cash Collateral Account investment. The WVIMB limits the exposure to credit risk in the Pool by maintaining at least an average rating of BBB (investment grade) as defined by a nationally recognized statistical rating organization. The WVIMB reviews available ratings from Standard & Poor's, Moody's, and Fitch, and reports the rating indicative of the greatest degree of risk. The Pool holds some securities that have not received a rating from the aforementioned rating organizations. These securities have been listed as not rated in the table below. The absence or lack of a rating does not necessarily indicate a greater degree of risk. The money market mutual fund has the highest credit rating. The Cash Collateral Account is not rated. The following table provides credit ratings for the Pool's fixed income investments as of June 30, 2023 (in thousands):

| Rating                                | Fair Value          |
|---------------------------------------|---------------------|
| AAA                                   | \$ 43,966           |
| AA                                    | 1,147,027           |
| A                                     | 185,813             |
| BBB                                   | 277,969             |
| BB                                    | 10,142              |
| B                                     | 672                 |
| CCC                                   | 120                 |
| CC                                    | -                   |
| C                                     | -                   |
| Withdrawn                             | 1,516               |
| Not rated                             | 105,782             |
| <b>Total fixed income investments</b> | <b>\$ 1,773,007</b> |

*Concentration of Credit Risk*

The Pool is restricted from investing more than 5 percent of the value of the Pool in any one corporate name. At June 30, 2023, the Pool was in compliance with this restriction and is not exposed to concentration of credit risk.

*Custodial Credit Risk*

At June 30, 2023, the Pool held no securities that were subject to custodial credit risk. Securities on loan are collateralized to a minimum of 102 percent, and the collateral is held by the WVIMB's custodian in the name of the WVIMB. The money market mutual fund and the Cash Collateral Account are not subject to custodial credit risk. All remaining securities are held by the WVIMB's custodian in the name of the WVIMB.

*Interest Rate Risk*

The Pool is exposed to interest rate risk from its fixed income investments, money market mutual fund investment, and Cash Collateral Account investment. As of June 30, 2023, the money market mutual fund has a weighted average maturity (WAM) of 12 days. Except for repurchase agreements that can have up to 95 days to maturity, investments in the Cash Collateral Account are limited to overnight investments. As of June 30, 2023, the WAM for the Cash Collateral Account was 3 days.

The WVIMB monitors interest rate risk of the Pool by evaluating the effective duration of the investments in the Pool. Effective duration is a method of disclosing interest rate risk that measures the expected change in the price of a fixed income security for a 1 percent change in interest rates. The effective duration calculation considers the most likely timing of variable cash flows, which is particularly useful for measuring interest rate risk of callable bonds, commercial and residential mortgage-backed securities, asset-backed securities, and collateralized mortgage obligations. The following table provides the weighted average effective duration for the Pool's fixed income investments as of June 30, 2023 (in thousands):

West Virginia Consolidated Public Retirement Board  
Notes to the Financial Statements (Continued)

5 - INVESTMENTS (Continued)

Core Fixed Income (continued)

| Investment Type                           | Fair Value          | Effective Duration (years) |
|---|---------------------|----------------------------|
| Corporate asset-backed issues             | \$ 166,971          | 2.0                        |
| Corporate CMO                             | 77,010              | 2.2                        |
| Corporate CMO interest-only               | 123                 | 1.7                        |
| Corporate CMO principal-only              | 23                  | 1.7                        |
| Foreign asset-backed issues               | 2,281               | (0.1)                      |
| Foreign corporate bonds                   | 121,780             | 4.4                        |
| Foreign government bonds                  | 3,213               | 11.7                       |
| Municipal bonds                           | 9,834               | 9.4                        |
| U.S. corporate bonds                      | 278,937             | 8.0                        |
| U.S. Government agency CMO                | 112,612             | 5.1                        |
| U.S. Government agency CMO interest-only  | 1,393               | 7.7                        |
| U.S. Government agency CMO principal-only | 1,770               | 5.0                        |
| U.S. Government agency MBS                | 386,105             | 6.0                        |
| U.S. Treasury bonds                       | 610,955             | 8.2                        |
| <b>Total fixed income investments</b>     | <b>\$ 1,773,007</b> |                            |

The Pool invests in commercial and residential mortgage-backed securities, asset-backed securities, and collateralized mortgage obligations. The cash flows from these securities are based on the payment of the underlying collateral. The effective duration and yield to maturity of these securities are dependent on estimated prepayment assumptions that consider historical experience, market conditions and other criteria. Actual prepayments may vary with changes in interest rates. Rising interest rates often result in a slower rate of prepayments while declining rates tend to lead to faster prepayments. As a result, the fair values of these securities are highly sensitive to interest rate changes. At June 30, 2023, the Pool held \$748,288 of these securities. This represents approximately 42 percent of the value of the Pool's fixed income securities.

*Participation Schedule*

This pool is participated in by entities other than the retirement systems administered by the WVCPRB. The disclosures for this pool represent the pool, as a whole. The following schedule provides the values of the WVCPRB's administered retirement systems' participation in the Pool at June 30, 2023 (in thousands):

| Core Fixed Income  |                     |                     |
|--|---------------------|---------------------|
| Participant  | Account Value       | Percentage of Total |
| Public Employees' Retirement System                            | \$ 582,903          | 32.47%              |
| Teachers' Retirement System                                    | 638,250             | 35.56%              |
| State Police Death, Disability, and Retirement System          | 53,092              | 2.96%               |
| State Police Retirement System                                 | 23,125              | 1.29%               |
| Deputy Sheriff's Retirement System                             | 22,507              | 1.25%               |
| Judges' Retirement System                                      | 19,752              | 1.10%               |
| Emergency Medical Services Retirement System                   | 8,829               | 0.49%               |
| Municipal Police Officers' and Firefighters' Retirement System | 2,451               | 0.14%               |
| Natural Resources Police Officers's Retirement System          | 1,960               | 0.11%               |
| <b>Total of Retirement Systems</b>                             | <b>1,352,869</b>    | <b>75.37%</b>       |
| <b>Other Participants</b>                                      | <b>442,188</b>      | <b>24.63%</b>       |
| <b>Total</b>   | <b>\$ 1,795,057</b> | <b>100.00%</b>      |

**West Virginia Consolidated Public Retirement Board  
Notes to the Financial Statements (Continued)**

**5 - INVESTMENTS (Continued)**

Private Markets Pool

The objective of the Pool is to enhance the diversification and stability of the portfolio, while generating a higher level of income than generally available in the public fixed income markets and to provide for long-term growth of participants' assets and risk-reduction through diversification. The Pool primarily holds the WVIMB's investments in private credit & income funds, private equity funds, real estate investment trusts (REITs), and real estate limited partnerships and funds. Franklin Park, StepStone Group LP, and Verus have been retained by the WVIMB to provide consulting services related to the selection of limited partnerships and funds. Publicly traded assets are managed by CBRE Clarion Securities LLC and Security Capital Research & Management Inc.

*Credit Risk*

The Pool is exposed to credit risk from its fixed income investments, money market mutual fund investment, investments in unrated private credit & income funds, and the Cash Collateral Account. The WVIMB limits the exposure to credit risk in the Pool by maintaining at least an average rating of investment grade as defined by a nationally recognized statistical rating organization. The WVIMB reviews available ratings from Standard & Poor's and Moody's and reports the rating indicative of the greatest degree of risk. The money market mutual fund has the highest credit rating. The Cash Collateral Account is not rated. Credit risk associated with the unrated private credit & income funds are limited by requiring that underlying fund holdings are at least 90 percent collateralized by one or more assets of the borrower.

The following table provides credit ratings for the Pool's fixed income investments as of June 30, 2023:

| Rating                         | Fair Value |
|--------------------------------|------------|
| A                              | \$ 265     |
| BBB                            | 9,348      |
| BB                             | 1,887      |
| B                              | 83         |
| Total fixed income investments | \$ 11,583  |

*Concentration of Credit Risk*

The Pool's investments in alternative investment funds might be indirectly exposed to concentration of credit risk.

*Custodial Credit Risk*

At June 30, 2023, the Pool held no securities that were directly subject to custodial credit risk. Securities on loan are collateralized to a minimum of 102 percent for U.S. Dollar denominated loans and 105 percent for foreign denominated loans, and the collateral is held by the WVIMB's custodian in the name of the WVIMB. All remaining securities, except for the alternative investments, are held by the WVIMB's custodian in the name of the WVIMB.

*Interest Rate Risk*

The Pool is exposed to interest rate risk through its investments in U.S. corporate bonds, opportunistic income funds and a money market mutual fund. The WVIMB monitors interest rate risk of U.S. corporate bonds by evaluating the effective duration. Effective duration is a method of disclosing interest rate risk that measures the expected change in the price of a fixed income security for a 1 percent change in interest rates. The effective duration calculation takes into account the most likely timing of variable cash flows, which is particularly useful for measuring interest rate risk of callable bonds. As of June 30, 2023, the effective duration for U.S. corporate bonds was 5.4 years. The WVIMB manages interest rate risk of the private credit & income funds by investing primarily in funds that originate or invest in loans that have a variable or floating interest rates, most of these investments have relatively short durations, and final maturities within three- to five-years. As of June 30, 2023, the money market mutual fund has a weighted average maturity (WAM) of 12 days. The WAM for securities lending collateral investments is not to exceed 90 days. As of June 30, 2023, the WAM for securities lending collateral was 3 days.

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**5 - INVESTMENTS (Continued)**

Private Markets Pool (continued)

*Foreign Currency Risk*

The Pool holds foreign common stock, real estate limited partnerships and funds, and cash that is denominated in foreign currencies and exposed to foreign currency risks. Investments in private credit & income funds and private equity partnerships might be indirectly exposed to foreign currency risk.

The amounts at fair value (in U.S. dollars) of investments and cash denominated in foreign currencies as of June 30, 2023, are as follows:

| Currency                              | Foreign<br>Common<br>Stock | Real Estate<br>Limited<br>Partnerships<br>and Funds | Cash           | Total               |
|---------------------------------------|----------------------------|---|----------------|---------------------|
| Australian Dollar                     | \$ 3,685                   | \$ -  | \$ -           | \$ 3,685            |
| British Pound                         | 3,974                      | -   | -              | 3,974               |
| Canadian Dollar                       | 1,664                      | 61,089  | -              | 62,753              |
| Euro Currency Unit                    | 5,974                      | 122,566   | -              | 128,540             |
| Hong Kong Dollar                      | 4,620                      | -   | -              | 4,620               |
| Japanese Yen                          | 8,340                      | -   | 28             | 8,368               |
| Singapore Dollar                      | 2,857                      | -   | -              | 2,857               |
| Swedish Krona                         | 955                        | -   | -              | 955                 |
| Swiss Franc                           | 1,136                      | -   | -              | 1,136               |
| Total foreign denominated investments | 33,205                     | 183,655   | -              | 216,888             |
| U.S. Dollar                           | 2,006                      | 2,016,618   | (18)           | 2,018,606           |
| <b>Total</b>                          | <b>\$ 35,211</b>           | <b>\$ 2,200,273</b>                                 | <b>\$ (18)</b> | <b>\$ 2,235,494</b> |

*Participation Schedule*

This pool is participated in by entities other than the retirement systems administered by the WVCPRB. The disclosures for this pool represent the pool, as a whole. The following schedule provides the values of the WVCPRB's administered retirement systems' participation in the Pool at June 30, 2023:

| Participant  | Account Value       | Percentage<br>of Total |
|--|---------------------|------------------------|
| Public Employees' Retirement System                            | \$ 2,348,329        | 39.37%                 |
| Teachers' Retirement System                                    | 2,592,052           | 43.46%                 |
| State Police Death, Disability, and Retirement System          | 218,529             | 3.66%                  |
| State Police Retirement System                                 | 88,904              | 1.49%                  |
| Deputy Sheriff's Retirement System                             | 88,136              | 1.48%                  |
| Judges' Retirement System                                      | 77,750              | 1.30%                  |
| Emergency Medical Services Retirement System                   | 34,182              | 0.57%                  |
| Municipal Police Officers' and Firefighters' Retirement System | 9,325               | 0.16%                  |
| Natural Resources Police Officers's Retirement System          | 7,624               | 0.13%                  |
| Total of Retirement Systems                                    | 5,464,831           | 91.63%                 |
| Other Participants   | 499,430             | 8.37%                  |
| <b>Total</b>   | <b>\$ 5,964,261</b> | <b>100.00%</b>         |

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

**5 - INVESTMENTS (Continued)**

Hedge Fund

The Pool was established to hold the WVIMB's investments in hedge funds. The objective of the Pool is to reduce risk through diversification of participants' assets. The primary performance benchmark is the Hedge Funds Research, Inc. Fund of Funds Composite Index plus 100 Basis points. The secondary benchmark is the FTSE 3 Month US T-Bill Index plus 500 basis points. Albourne America, LLC has been retained by the WVIMB to provide consulting services for this investment strategy.

The Pool holds shares in hedge funds and shares of a money market mutual fund. As of June 30, 2023, the money market mutual fund has the highest credit rating and has a weighted average maturity of 41 days. Investments in hedge funds might be indirectly exposed to foreign currency risk, credit risk, interest rate risk, and/or custodial credit risk. The Pool is restricted from investing more than 10 percent of the value of the Pool with any single manager. At June 30, 2023, the Pool was in compliance with this restriction and is not exposed to concentration of credit risk.

*Participation Schedule*

This pool is participated in by entities other than the retirement systems administered by the WVCPRB. The disclosures for this pool represent the pool, as a whole. The following schedule provides the values of the WVCPRB's administered retirement systems' participation in the Pool at June 30, 2023 (in thousands):

| Participant  | Account Value | Percentage of Total |
|--|---------------|---------------------|
| Public Employees' Retirement System                            | \$ 845,127    | 34.06%              |
| Teachers' Retirement System                                    | 932,938       | 37.60%              |
| State Police Death, Disability, and Retirement System          | 78,649        | 3.17%               |
| State Police Retirement System                                 | 32,005        | 1.29%               |
| Deputy Sheriff's Retirement System                             | 31,726        | 1.28%               |
| Judges' Retirement System                                      | 27,987        | 1.13%               |
| Emergency Medical Services Retirement System                   | 12,306        | 0.50%               |
| Municipal Police Officers' and Firefighters' Retirement System | 3,357         | 0.14%               |
| Natural Resources Police Officers's Retirement System          | 2,744         | 0.11%               |
| Total of Retirement Systems                                    | 1,966,839     | 79.28%              |
| Other Participants   | 514,244       | 20.72%              |
| Total  | \$ 2,481,083  | 100.00%             |

Investments and Deposits - TDCRS

*Concentration of Credit Risk*

As of June 30, 2023, the TDCRS has investment balances with the following issuers which were greater than 5% of the total investment balance of the TDCRS (in thousands):

|                                   |            |
|-----------------------------------|------------|
| VALIC Fixed Annuity Option        | \$ 180,828 |
| T. Rowe Price Blue Chip Growth    | 95,272     |
| Vanguard Large Cap Index          | 67,146     |
| Putnam Large Cap Value Y          | 60,270     |
| Empower SF Balanced Trust         | 34,112     |
| Empower Lifetime 2035 Trust       | 36,222     |
| Other (less than 5% individually) | 184,967    |
|                                   | \$ 658,817 |

Investments and Deposits – TDCRS (continued)

*Concentration of Credit Risk - Cash Deposits*

At June 30, 2023, TDCRS had \$5,269,694 on deposit with the West Virginia State Treasurer's Office and \$285,948 in depository accounts with financial institutions. The deposits with financial institutions, which had a bank balance of \$285,948 are either insured by the Federal Deposit Insurance Corporation or collateralized with securities held in TDCRS' name by its agent.

*Interest Rate Risk*

As of June 30, 2023, all of TDCRS' investments had a maturity date of less than one year.

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

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**6 - INVESTMENT CONTRACT WITH INSURANCE COMPANY**

The TDCRS maintains an investment contract with Variable Annuity Life Insurance Company (VALIC) which is a benefit-responsive individually allocated investment contract with a guaranteed rate of return. The account is credited with earnings on the underlying investments and charged for participant withdrawals and administrative expenses. The guaranteed investment contract issuer is contractually obligated to repay the principal and a specified interest rate that is guaranteed to the TDCRS. There are no reserves against contract value for credit risk of the contract issuer or otherwise. The crediting interest rate is based on a formula agreed upon with the issuer, but it may not be less than 4.5%. Such interest rates are reviewed quarterly for resetting.

This contract meets the fully-benefit responsive investment contract criteria and is therefore reported at contract value. Contract value is the relevant measurement attribute for that portion of the net assets available for benefits attributable to the guaranteed investment contract because that is the amount received by participants if they were to initiate permitted transactions under the terms of the TDCRS. Contract value, as reported to the Board by VALIC, represents contributions made under the contract, plus earnings, less participant withdrawals, and administrative expenses. Participants may ordinarily direct the withdrawal or transfer of all or a portion of their investment at contract value.

The value of the contract on June 30, 2023, was \$180,828,181.

**7 - CONTINGENCIES**

The Board is engaged in various legal actions that it considers to be in the ordinary course of business. Some of these cases involve potentially significant amounts for which legal counsel is unable to render an opinion on the outcome. Further, the financial impact of some cases is dependent upon judicial rulings in favor of petitioners and would have to be actuarially determined, inasmuch as the relief sought is an increase in the petitioners' annuity benefit. Accordingly, the financial statement impact of such cases cannot be determined at the present time. As legal actions are resolved, the Board recognizes the liability in its financial statements in the period the amount can be estimated.

**8 - RISK MANAGEMENT**

The Board is exposed to various risks of loss related to torts; theft or damage to, and destruction of assets; errors and omissions; injuries to, and illnesses of employees; medical liabilities; and natural disasters.

Health insurance coverage for the Board's employees is obtained through its participation in the West Virginia Public Employees Insurance Agency (PEIA). PEIA provides the following basic employee benefit coverage to all participants: hospital, surgical, group major medical, basic group life, accidental death, and prescription drug coverage for active and retired employees of the State of West Virginia and various related State and non-State agencies. Additionally, the Board has obtained coverage for job-related injuries through the purchase of a policy through a commercial carrier. In exchange for the payment of premiums to PEIA and a commercial carrier, the Board has transferred its risks related to health coverage for employees and job-related injuries of employees. Furthermore, the Board is a participant in the self-insured public entity risk pool administered by the Board of Risk and Insurance Management. Coverage is in the amount of \$1,000,000 per occurrence for general liability and property damage.

**9 - NEW ACCOUNTING PRONOUNCEMENTS**

Recent Statements Issued by the Governmental Accounting Standards Board

The GASB issued Statement No. 94, *Public-Private and Public-Public Partnerships and Availability Payment Arrangements*, to improve financial reporting by addressing issues related to public-private and public-public partnership arrangements. This statement is effective for fiscal year 2023, and there is no financial statement impact of the pronouncement.

The GASB issued Statement No. 96, *Subscription-Based Information Technology Arrangements*, to provide guidance on the accounting and financial reporting for subscription-based information technology arrangements for government end users. This statement is effective for fiscal year 2023, and there is no financial statement impact of the pronouncement.

**West Virginia Consolidated Public Retirement Board**  
**Notes to the Financial Statements (Continued)**

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**9 – NEW ACCOUNTING PRONOUNCEMENTS (Continued)**

The GASB issued Statement No. 99, *Omnibus 2022*, to enhance comparability in accounting and financial reporting and to improve the consistency of authoritative literature by addressing (1) practice issues that have been identified during implementation and application of certain GASB Statements and (2) accounting and financial reporting for financial guarantees. This statement is effective for fiscal year 2024, and management has not yet determined the financial statement impact of the pronouncement.

The GASB issued Statement No. 100, *Accounting Changes and Error Corrections—An Amendment of GASB Statement No. 62*, to enhance accounting and financial reporting requirements for accounting changes and error corrections to provide more understandable, reliable, relevant, consistent, and comparable information for making decisions or assessing accountability. This statement is effective for fiscal year 2024, and management has not yet determined the financial statement impact of the pronouncement.

The GASB issued Statement No. 101, *Compensated Absences*, to better meet the information needs of financial statement users by updating the recognition and measurement guidance for compensated absences. That objective is achieved by aligning the recognition and measurement guidance under a unified model and by amending certain previously required disclosures. This statement is effective for fiscal year 2025, and management has not yet determined the financial statement impact of the pronouncement.



**REQUIRED SUPPLEMENTAL INFORMATION**



West Virginia Consolidated Public Retirement Board  
 Financial Section  
 Required Supplemental Information

SCHEDULES OF NET PENSION LIABILITY AND CHANGES IN NET PENSION LIABILITY (ASSET)

(In Thousands)

Fiscal years Ending June 30

|  | PERS       |              |              |            |            |            |            |            |            |            |
|--|------------|--------------|--------------|------------|------------|------------|------------|------------|------------|------------|
|  | 2023       | 2022         | 2021         | 2020       | 2019       | 2018       | 2017       | 2016       | 2015       | 2014       |
| Total pension liability:   |            |              |              |            |            |            |            |            |            |            |
| Service cost   | \$ 145,632 | \$ 142,897   | \$ 130,480   | \$ 153,401 | \$ 121,228 | \$ 124,019 | \$ 124,129 | \$ 123,073 | \$ 137,207 | \$ 132,509 |
| Interest   | 582,625    | 569,913      | 549,214      | 723,457    | 519,350    | 504,275    | 490,075    | 476,235    | 456,022    | 440,022    |
| Differences between actual and expected experience                     | 31,603     | 15,330       | 80,207       | 104,159    | (26,020)   | 61,054     | (1,271)    | 674        | 152,277    | -          |
| Change in benefit terms  | 8,828      | -            | (20,850)     | 2,500      | 2,500      | -          | -          | -          | -          | -          |
| Assumption changes   |            |              | 236,067      |            | (55,650)   |            |            |            | (89,556)   |            |
| Benefit payments   | (522,340)  | (502,719)    | (479,094)    | (463,550)  | (448,747)  | (434,184)  | (412,779)  | (394,451)  | (374,164)  | (350,511)  |
| Net change in total pension liability                                  | 246,248    | 222,421      | 496,024      | 491,457    | 112,661    | 211,064    | 200,154    | 204,628    | 281,786    | 218,911    |
| Total pension liability, beginning                                     | 8,150,369  | 7,927,948    | 7,431,924    | 7,140,467  | 7,027,806  | 6,816,712  | 6,616,588  | 6,411,960  | 6,130,174  | 5,911,250  |
| Total pension liability, ending (a)                                    | 8,396,617  | 8,150,369    | 7,927,948    | 7,631,924  | 7,140,467  | 7,027,806  | 6,816,742  | 6,616,588  | 6,411,960  | 6,130,174  |
| Plan fiduciary net position:   |            |              |              |            |            |            |            |            |            |            |
| Contributions - employer   | 163,475    | 167,761      | 159,259      | 155,210    | 147,031    | 152,541    | 165,676    | 160,807    | 189,947    | 194,728    |
| Contributions - member   | 89,190     | 91,165       | 78,762       | 75,857     | 70,367     | 65,156     | 64,589     | 62,982     | 61,838     | 60,839     |
| Net investment income  | 669,213    | 7342,500     | 2,170,293    | 215,355    | 393,179    | 606,303    | 875,090    | 618,271    | 219,329    | 694,022    |
| Benefit payments   | (522,340)  | (502,719)    | (479,094)    | (463,550)  | (448,747)  | (434,184)  | (412,779)  | (394,454)  | (374,164)  | (350,511)  |
| Administrative expense   | (3,736)    | (3,520)      | (6,311)      | (6,185)    | (6,915)    | (6,800)    | (4,989)    | (4,387)    | (4,785)    | (4,656)    |
| Other  | (2,032)    | 1,238        | (20,278)     | 1,033      | 995        | 1,407      | 120        | 113        | 282        | 132        |
| Net change in plan fiduciary net position                              | 393,770    | (738,555)    | 1,902,631    | (22,201)   | 156,900    | 381,157    | 687,717    | (156,177)  | 92,447     | 701,475    |
| Plan fiduciary net position, beginning                                 | 8,007,329  | 8,905,884    | 6,903,253    | 7,925,454  | 6,769,564  | 6,385,017  | 5,697,470  | 5,853,550  | 5,761,109  | 4,999,633  |
| Prior period adjustment  | -          | -            | -            | -          | -          | -          | (90)       | -          | -          | -          |
| Plan fiduciary net position, beginning, as restated                    | 8,007,329  | 8,905,884    | 6,903,253    | 7,925,454  | 6,769,564  | 6,385,017  | 5,697,380  | 5,853,647  | 5,761,109  | 4,999,633  |
| Plan fiduciary net position, ending (b)                                | 8,401,099  | 8,007,329    | 8,805,884    | 8,003,253  | 6,925,464  | 6,569,554  | 6,385,097  | 5,697,470  | 5,858,556  | 5,591,109  |
| Net pension liability (asset), ending (a) - (b)                        | \$ (4,482) | \$ 1,450,010 | \$ (877,936) | \$ 628,171 | \$ 215,013 | \$ 258,252 | \$ 431,645 | \$ 919,119 | \$ 558,404 | \$ 369,065 |
| Plan fiduciary net position as a percentage of total pension liability | 100.05%    | 98.24%       | 111.07%      | 92.80%     | 96.99%     | 96.30%     | 93.67%     | 86.11%     | 91.29%     | 92.98%     |
| Covered payroll  | 1,655,199  | 1,611,396    | 1,574,183    | 1,497,636  | 1,388,662  | 1,430,577  | 1,414,584  | 1,392,118  | 1,373,129  | 1,360,800  |
| Net pension liability (asset) as a percentage of covered payroll       | -0.27%     | 8.99%        | -55.77%      | 42.00%     | 15.48%     | 18.00%     | 30.51%     | 66.02%     | 40.67%     | 26.55%     |

See Independent Auditor's Report and Notes to Required Supplementary Information

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Required Supplemental Information**

**SCHEDULES OF NET PENSION LIABILITY AND CHANGES IN NET PENSION LIABILITY (ASSET)**

(In Thousands)  
 Fiscal years Ending June 30

|  | 2023         | 2022         | 2021         | 2020         | 2019         | 2018         | 2017         | 2016         | 2015         | 2014         |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>Total pension liability:</b>  |              |              |              |              |              |              |              |              |              |              |
| Service cost   | \$ 160,164   | \$ 156,722   | \$ 150,254   | \$ 149,739   | \$ 141,472   | \$ 146,797   | \$ 153,006   | \$ 149,837   | \$ 146,798   | \$ 147,149   |
| Interest   | 818,175      | 811,208      | 808,482      | 791,731      | 792,389      | 786,313      | 780,855      | 753,418      | 744,455      | 730,912      |
| Differences between actual and expected experience                     | 20,180       | 18,895       | 96,300       | 83,012       | (69,708)     | (19,576)     | (59,290)     | 65,240       | (36,005)     | -            |
| Change in benefit terms  | 15,200       | -            | -            | -            | 5,200        | -            | -            | -            | -            | -            |
| Assumption changes   | -            | 228,777      | 17,400       | 17,400       | -            | -            | -            | 195,342      | -            | -            |
| Benefit payments   | (897,831)    | (880,549)    | (871,516)    | (853,967)    | (838,309)    | (816,102)    | (789,058)    | (779,503)    | (718,838)    | (676,210)    |
| Net change in total pension liability                                  | 115,888      | 96,396       | 412,297      | 101,359      | 31,044       | 97,432       | 92,513       | 384,325      | 136,410      | 201,851      |
| Total pension liability, beginning                                     | 11,579,922   | 11,477,566   | 11,065,269   | 10,873,910   | 10,842,866   | 10,745,434   | 10,652,921   | 10,268,596   | 10,132,186   | 9,930,335    |
| Total pension liability, ending (a)                                    | 11,689,810   | 11,573,962   | 11,477,566   | 10,975,269   | 10,873,910   | 10,842,866   | 10,745,434   | 10,652,921   | 10,268,596   | 10,132,186   |
| Plan fiduciary net position:   |              |              |              |              |              |              |              |              |              |              |
| Contributions - employer   | 452,521      | 463,005      | 417,334      | 463,846      | 481,986      | 471,837      | 451,447      | 426,678      | 490,640      | 441,840      |
| Contributions - member   | 104,432      | 95,691       | 97,258       | 96,511       | 92,759       | 89,128       | 91,503       | 95,177       | 94,694       | 90,612       |
| Other statutorily required contributions                               | -            | -            | -            | -            | -            | -            | -            | -            | -            | 321,553      |
| Other contributions - appropriations                                   | 739,885      | 600,511      | 2,429,811    | 211,591      | 444,661      | 688,273      | 994,989      | 418,492      | 255,988      | 1,007,180    |
| Net investment income  | (897,831)    | (890,410)    | (871,516)    | (853,967)    | (838,309)    | (816,102)    | (789,058)    | (779,503)    | (718,838)    | (676,210)    |
| Benefit payments   | (4,182)      | 63,951       | (5,221)      | (5,525)      | (6,239)      | (6,155)      | (4,582)      | (1,507)      | (4,432)      | (13,48)      |
| Administrative expense   | 3,732        | 3,385        | 2,793        | 3,139        | 3,272        | 3,016        | 3,077        | 302          | 3,197        | 3,540        |
| Other  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            |
| Net change in plan fiduciary net position                              | 398,547      | (912,930)    | 2,070,459    | (61,411)     | 178,130      | 430,117      | 747,376      | (200,253)    | 121,249      | 930,952      |
| Plan fiduciary net position, beginning                                 | 9,001,857    | 9,301,787    | 7,844,328    | 7,898,739    | 7,720,609    | 7,290,162    | 6,543,087    | 6,803,342    | 6,682,093    | 5,751,101    |
| Prior period adjustment  | -            | -            | -            | -            | -            | (1)          | (1)          | -            | -            | -            |
| Plan fiduciary net position, beginning, as restated                    | 9,001,857    | 9,301,787    | 7,844,328    | 7,898,739    | 7,720,609    | 7,290,162    | 6,543,086    | 6,803,342    | 6,682,093    | 5,751,101    |
| Plan fiduciary net position, ending (b)                                | 9,400,404    | 9,001,857    | 9,914,787    | 7,841,328    | 7,898,739    | 7,720,609    | 7,290,462    | 6,543,087    | 6,803,342    | 6,682,093    |
| Net pension liability (asset), ending (a) - (b)                        | \$ 2,289,406 | \$ 2,572,065 | \$ 1,562,779 | \$ 3,229,941 | \$ 2,975,171 | \$ 3,122,257 | \$ 3,454,972 | \$ 4,109,834 | \$ 3,465,254 | \$ 3,480,093 |
| Plan fiduciary net position as a percentage of total pension liability | 80.42%       | 77.78%       | 86.38%       | 70.80%       | 72.64%       | 71.20%       | 67.85%       | 61.42%       | 66.25%       | 65.85%       |
| Covered payroll  | 1,686,598    | 1,636,411    | 1,604,576    | 1,569,477    | 1,404,586    | 1,472,143    | 1,505,080    | 1,511,271    | 1,481,786    | 1,403,515    |
| Net pension liability (asset) as a percentage of covered payroll       | 135.74%      | 157.18%      | 97.40%       | 213.38%      | 211.82%      | 212.27%      | 229.55%      | 271.95%      | 233.86%      | 247.10%      |

See Independent Auditor's Report and Notes to Required Supplementary Information

West Virginia Consolidated Public Retirement Board  
 Financial Section  
 Required Supplemental Information

SCHEDULES OF NET PENSION LIABILITY AND CHANGES IN NET PENSION LIABILITY (ASSET)

(In Thousands)  
 Fiscal years Ending June 30  
 (Continued)

|  | SPDDRS     |            |             |            |           |            |            |            |            |            |  |
|--|------------|------------|-------------|------------|-----------|------------|------------|------------|------------|------------|--|
|  | 2023       | 2022       | 2021        | 2020       | 2019      | 2018       | 2017       | 2016       | 2015       | 2014       |  |
| Total pension liability:   |            |            |             |            |           |            |            |            |            |            |  |
| Service cost   | \$ 66      | \$ 98      | \$ 89       | \$ 75      | \$ 540    | \$ 931     | \$ 1,071   | \$ 1,263   | \$ 1,774   | \$ 2,215   |  |
| Interest   | 56,660     | 56,238     | 56,154      | 65,478     | 54,438    | 54,904     | 53,131     | 51,913     | 50,748     | 49,778     |  |
| Differences between actual and expected experience                     | (1,405)    | 1,458      | (672)       | 1,901      | 6,331     | (2,218)    | 47         | 6,283      | 4,344      | -          |  |
| Assumption changes   | (52,429)   | -          | 22,231      | (49,225)   | (47,551)  | (45,329)   | 1,961      | -          | -          | (47,365)   |  |
| Benefit payments   |            | (51,117)   | (50,228)    | (49,225)   | (47,551)  | (45,329)   | (43,325)   | (41,969)   | (39,708)   | (37,365)   |  |
| Net change in total pension liability                                  | 2,892      | 6,317      | 27,574      | 10,907     | 13,758    | 7,188      | 12,885     | 17,490     | 17,158     | 14,128     |  |
| Total pension liability, beginning                                     | 807,666    | 801,319    | 773,745     | 763,838    | 749,080   | 741,802    | 729,007    | 711,517    | 694,359    | 679,591    |  |
| Total pension liability, ending (a)                                    | 810,558    | 807,636    | 801,319     | 773,745    | 762,838   | 749,080    | 741,892    | 729,007    | 711,517    | 694,359    |  |
| Plan fiduciary net position:   |            |            |             |            |           |            |            |            |            |            |  |
| Contributions - employer   | 40         | 17,842     | 16,699      | 16,246     | 15,595    | 24,829     | 17,155     | 13,977     | 21,668     | 19,521     |  |
| Contributions - member   | 21         | 26         | 34          | 30         | 110       | 186        | 362        | 326        | 445        | 543        |  |
| Net investment income  | 62,950     | (5) 1,900  | 208,656     | 21,252     | 38,174    | 60,909     | 87,793     | (1,230)    | 22,866     | 30,872     |  |
| Benefit payments   | (52,429)   | (51,417)   | (50,228)    | (49,225)   | (47,551)  | (45,329)   | (43,325)   | (41,969)   | (39,708)   | (37,365)   |  |
| Administrative expense   | (358)      | (310)      | (54)        | (54)       | (63)      | (61)       | (45)       | (48)       | (51)       | (53)       |  |
| Other  | 705        | 721        | 822         | 530        | 752       | 591        | 847        | 568        | 861        | 729        |  |
| Net change in plan fiduciary net position                              | 10,929     | (84,328)   | 175,929     | (14,210)   | 7,017     | 41,935     | 62,787     | (25,369)   | 6,081      | 65,009     |  |
| Plan fiduciary net position, beginning                                 | 767,205    | 851,543    | 675,804     | 689,820    | 682,803   | 647,585    | 578,798    | 607,158    | 601,077    | 545,408    |  |
| Prior period adjustment  | -          | -          | -           | -          | -         | 160        | -          | -          | -          | -          |  |
| Plan fiduciary net position, beginning, as restated                    | 767,205    | 851,543    | 675,804     | 689,820    | 682,803   | 647,745    | 578,798    | 607,158    | 601,077    | 545,408    |  |
| Plan fiduciary net position, ending (b)                                | 778,134    | 767,205    | 851,533     | 675,609    | 689,820   | 682,803    | 641,585    | 578,798    | 607,158    | 601,077    |  |
| Net pension liability (asset), ending (a) - (b)                        | \$ 32,424  | \$ 40,431  | \$ (50,214) | \$ 98,141  | \$ 73,018 | \$ 66,277  | \$ 100,307 | \$ 130,209 | \$ 104,359 | \$ 343,282 |  |
| Plan fiduciary net position as a percentage of total pension liability | 96.00%     | 94.30%     | 106.27%     | 87.92%     | 90.43%    | 91.15%     | 86.48%     | 79.40%     | 85.33%     | 86.67%     |  |
| Covered payroll  | 290        | 353        | 349         | 514        | 1,527     | 2,963      | 3,181      | 3,713      | 5,120      | 5,094      |  |
| Net pension liability (asset) as a percentage of covered payroll       | 11,180.69% | 11,462.03% | -14,387.97% | 19,083.68% | 4781.79%  | 22,369.02% | 3153.32%   | 4045.40%   | 2038.26%   | 1747.82%   |  |

See Independent Auditor's Report and Notes to Required Supplementary Information

West Virginia Consolidated Public Retirement Board  
 Financial Section  
 Required Supplemental Information

SCHEDULES OF NET PENSION LIABILITY AND CHANGES IN NET PENSION LIABILITY (ASSET)

(In Thousands)  
 Fiscal years Ending June 30  
 (Continued)

|  | 2023      | 2022      | 2021        | 2020      | 2019      | 2018     | 2017     | 2016     | 2015       | 2014       |
|--|-----------|-----------|-------------|-----------|-----------|----------|----------|----------|------------|------------|
| SPRS   |           |           |             |           |           |          |          |          |            |            |
| Total pension liability:   |           |           |             |           |           |          |          |          |            |            |
| Service cost   | \$ 10,019 | \$ 9,258  | \$ 8,794    | \$ 8,533  | \$ 7,456  | \$ 7,617 | \$ 6,827 | \$ 6,750 | \$ 6,887   | \$ 5,890   |
| Interest   | 24,431    | 21,236    | 19,210      | 16,918    | 14,654    | 13,496   | 11,410   | 10,113   | 9,024      | 8,021      |
| Differences between actual and expected experience                     | 4,600     | 3,451     | 513         | 7,888     | (3,513)   | (3,610)  | (765)    | 1,636    | (201)      | -          |
| Change in benefit terms  | -         | 15,800    | -           | -         | 12,731    | -        | -        | -        | -          | -          |
| Assumption changes   | -         | -         | 12,476      | -         | -         | -        | 11,192   | -        | -          | -          |
| Benefit payments   | (7,146)   | (5,713)   | (3,599)     | (2,498)   | (1,944)   | (1,842)  | (1,454)  | (1,071)  | (1,051)    | (913)      |
| Net change in total pension liability                                  | 31,904    | 44,011    | 37,394      | 30,811    | 29,384    | 15,061   | 27,210   | 17,425   | 14,109     | 12,998     |
| Total pension liability, beginning                                     | 830,539   | 386,528   | 249,134     | 218,293   | 188,909   | 173,248  | 146,038  | 128,610  | 114,501    | 101,503    |
| Total pension liability, ending (a)                                    | 862,443   | 430,539   | 286,528     | 249,104   | 218,293   | 188,309  | 173,248  | 146,038  | 128,610    | 114,501    |
| Plan fiduciary net position:   |           |           |             |           |           |          |          |          |            |            |
| Contributions - employer   | 8,100     | 9,428     | 7,328       | 4,850     | 4,556     | 4,205    | 3,657    | 3,887    | 4,060      | 4,049      |
| Contributions - member   | 4,860     | 4,395     | 4,185       | 4,166     | 3,905     | 3,921    | 3,684    | 3,755    | 3,609      | 3,630      |
| Net investment income  | 24,933    | (19,815)  | 72,138      | 7,010     | 11,730    | 16,303   | 22,346   | 91       | 4,972      | 17,756     |
| Benefit payments   | (7,146)   | (5,713)   | (3,599)     | (2,498)   | (1,944)   | (1,842)  | (1,454)  | (1,071)  | (1,051)    | (912)      |
| Administrative expense   | (136)     | (120)     | (59)        | (67)      | (60)      | (60)     | (64)     | (7)      | (46)       | (43)       |
| Other  | 129       | -         | -           | -         | -         | -        | -        | (163)    | -          | -          |
| Net change in plan fiduciary net position                              | 30,741    | (11,855)  | 80,598      | 13,463    | 18,187    | 22,227   | 28,119   | 6,452    | 11,545     | 24,460     |
| Plan fiduciary net position, beginning                                 | 289,303   | 301,138   | 220,565     | 207,102   | 188,915   | 166,688  | 138,569  | 132,117  | 120,572    | 96,092     |
| Plan fiduciary net position, ending (b)                                | 320,044   | 289,303   | 301,168     | 220,565   | 207,102   | 188,915  | 166,688  | 138,569  | 132,117    | 120,572    |
| Net pension liability (asset), ending (a) - (b)                        | \$ 42,399 | \$ 11,236 | \$ (14,630) | \$ 28,539 | \$ 11,191 | \$ 65    | \$ 6,560 | \$ 7,469 | \$ (3,507) | \$ (6,817) |
| Plan fiduciary net position as a percentage of total pension liability | 88.30%    | 87.52%    | 105.11%     | 88.54%    | 94.87%    | 100.00%  | 96.21%   | 94.89%   | 102.73%    | 105.30%    |
| Covered payroll  | 38,809    | 35,120    | 34,946      | 33,904    | 30,938    | 32,291   | 31,562   | 31,792   | 29,574     | 27,701     |
| Net pension liability (asset) as a percentage of covered payroll       | 109.25%   | 117.11%   | -41.86%     | 84.29%    | 36.17%    | -0.02%   | 20.77%   | 23.49%   | -11.86%    | -24.92%    |

See Independent Auditor's Report and Notes to Required Supplementary Information

West Virginia Consolidated Public Retirement Board  
 Financial Section  
 Required Supplemental Information

SCHEDULES OF NET PENSION LIABILITY AND CHANGES IN NET PENSION LIABILITY (ASSET)

(In Thousands)  
 Fiscal years Ending June 30  
 (Continued)

|  | DPRS      |           |            |           |           |            |          |           |           |           |
|--|-----------|-----------|------------|-----------|-----------|------------|----------|-----------|-----------|-----------|
|  | 2023      | 2022      | 2021       | 2020      | 2019      | 2018       | 2017     | 2016      | 2015      | 2014      |
| Total pension liability:   |           |           |            |           |           |            |          |           |           |           |
| Service cost   | \$ 10,010 | \$ 9,516  | \$ 8,825   | \$ 8,369  | \$ 7,436  | \$ 7,084   | \$ 7,386 | \$ 5,979  | \$ 5,887  | \$ 6,716  |
| Interest   | 24,326    | 22,578    | 20,845     | 19,188    | 16,246    | 15,476     | 15,556   | 14,509    | 13,612    | 12,612    |
| Differences between actual and expected experience                     | 3,282     | 7,741     | (42)       | 7,320     | 2,697     | (1,370)    | (10,162) | 1,530     | 946       |           |
| Change in benefit terms  |           |           | 1,935      |           | 24,170    |            |          |           |           |           |
| Assumption changes   |           |           | 15,947     |           |           |            | (3,174)  |           |           |           |
| Benefit payments   | (16,965)  | (15,472)  | (13,894)   | (12,976)  | (11,940)  | (10,611)   | (10,143) | (8,785)   | (8,371)   | (7,791)   |
| Net change in total pension liability                                  | 20,653    | 24,363    | 33,586     | 22,301    | 38,609    | 10,379     | (537)    | 12,233    | 12,074    | 10,537    |
| Total pension liability, beginning                                     | 334,005   | 309,642   | 276,056    | 253,755   | 215,146   | 204,507    | 205,104  | 191,571   | 179,797   | 159,260   |
| Total pension liability, ending (a)                                    | 354,658   | 334,005   | 309,642    | 276,056   | 253,755   | 215,146    | 204,567  | 205,104   | 191,871   | 179,797   |
| Plan fiduciary net position:   |           |           |            |           |           |            |          |           |           |           |
| Contributions - employer   | 8,811     | \$ 2,338  | 7,213      | 6,861     | 6,705     | 6,194      | 5,922    | 6,071     | 5,972     | 5,977     |
| Contributions - member   | 5,776     | 5,531     | 5,177      | 4,860     | 4,846     | 4,416      | 4,163    | 4,306     | 4,068     | 3,908     |
| Net investment income  | 24,926    | (19,974)  | 76,547     | 7,325     | 13,200    | 19,361     | 27,282   | (44)      | 6,534     | 24,438    |
| Benefit payments   | (16,965)  | (15,472)  | (13,894)   | (12,976)  | (11,940)  | (10,611)   | (10,143) | (8,785)   | (8,371)   | (7,794)   |
| Administrative expense   | (137)     | (120)     | (136)      | (133)     | (145)     | (137)      | (102)    | (102)     | (95)      | (97)      |
| Other  | 323       | 404       | 555        | 404       | 479       | 471        | 431      | 463       | 505       | 556       |
| Net change in plan fiduciary net position                              | 22,734    | (21,379)  | 75,465     | 6,544     | 13,145    | 19,694     | 27,553   | 1,909     | 8,613     | 26,990    |
| Plan fiduciary net position, beginning                                 | 294,289   | 315,668   | 240,203    | 233,659   | 220,514   | 200,820    | 173,268  | 171,559   | 162,746   | 135,756   |
| Prior period adjustment  |           |           |            |           |           |            | (1)      |           |           |           |
| Plan fiduciary net position, beginning, as restated                    | 294,289   | 315,668   | 240,203    | 233,659   | 220,514   | 200,820    | 173,267  | 171,559   | 162,746   | 135,756   |
| Plan fiduciary net position, ending (b)                                | 317,023   | 294,289   | 315,668    | 240,203   | 233,659   | 220,514    | 200,820  | 173,268   | 171,359   | 160,746   |
| Net pension liability (asset), ending (a) - (b)                        | \$ 37,635 | \$ 39,716 | \$ (6,026) | \$ 35,853 | \$ 20,096 | \$ (3,365) | \$ 3,747 | \$ 31,536 | \$ 20,512 | \$ 17,051 |
| Plan fiduciary net position as a percentage of total pension liability | 89.39%    | 88.11%    | 101.95%    | 87.01%    | 92.08%    | 102.50%    | 98.17%   | 84.48%    | 89.31%    | 90.52%    |
| Covered payroll  | 65,637    | 62,284    | 58,289     | 57,698    | 53,676    | 49,915     | 51,004   | 49,051    | 46,634    | 45,106    |
| Net pension liability (asset) as a percentage of covered payroll       | 57.34%    | 63.77%    | -10.16%    | 62.14%    | 37.44%    | -10.73%    | 7.35%    | 64.36%    | 43.99%    | 37.80%    |

See Independent Auditor's Report and Notes to Required Supplementary Information

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Required Supplemental Information**

**SCHEDULES OF NET PENSION LIABILITY AND CHANGES IN NET PENSION LIABILITY (ASSET)**

(In Thousands)  
 Fiscal years Ending June 30  
 (Continued)

|  | JRS          |              |              |             |             |             |             |             |             |             |
|--|--------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|  | 2023         | 2022         | 2021         | 2020        | 2019        | 2018        | 2017        | 2016        | 2015        | 2014        |
| Total pension liability:   |              |              |              |             |             |             |             |             |             |             |
| Service cost   | \$ 2,855     | \$ 2,590     | \$ 2,358     | \$ 2,540    | \$ 2,406    | \$ 2,357    | \$ 2,466    | \$ 2,681    | \$ 2,812    | \$ 2,819    |
| Interest   | 8,138        | 7,903        | 8,735        | 8,711       | 8,608       | 8,539       | 8,521       | 8,478       | 8,458       | 7,978       |
| Differences between actual and expected experience                     | (3,984)      | (2,157)      | (19,046)     | (5,885)     | (4,969)     | (6,054)     | (6,101)     | (5,813)     | (6,506)     | -           |
| Change in benefit terms  | -            | -            | -            | -           | -           | -           | -           | -           | -           | -           |
| Assumption changes   | 5,218        | -            | 5,218        | -           | -           | 962         | -           | -           | -           | -           |
| Benefit payments   | (5,134)      | (5,046)      | (4,810)      | (4,807)     | (4,933)     | (4,932)     | (4,609)     | (4,429)     | (4,318)     | (4,455)     |
| Net change in total pension liability                                  | 1,875        | 2,992        | (7,545)      | 560         | 1,122       | 1,102       | 277         | 917         | 451         | 6,342       |
| Total pension liability, beginning                                     | 111,966      | 108,974      | 116,519      | 115,950     | 114,828     | 113,736     | 113,449     | 112,532     | 112,081     | 105,739     |
| Total pension liability, ending (a)                                    | 113,841      | 111,966      | 108,974      | 116,519     | 115,950     | 114,828     | 113,726     | 113,449     | 112,532     | 112,081     |
| Plan fiduciary net position:   |              |              |              |             |             |             |             |             |             |             |
| Contributions - employer   | 797          | 1,052        | 886          | 791         | 779         | 735         | 739         | 739         | 2,845       | 2,456       |
| Contributions - member   | 369          | 319          | 295          | 301         | 331         | 361         | 372         | 401         | 413         | 474         |
| Net investment income  | 22,031       | (17,631)     | 68,611       | 6,850       | 12,085      | 18,373      | 26,270      | (175)       | 6,525       | 25,263      |
| Benefit payments   | (5,134)      | (5,046)      | (4,810)      | (4,897)     | (4,933)     | (4,932)     | (4,609)     | (4,429)     | (4,318)     | (4,455)     |
| Administrative expense   | (121)        | (112)        | (10)         | (10)        | (11)        | (8)         | (6)         | (6)         | (6)         | (7)         |
| Other  | 1,303        | -            | -            | -           | (86)        | -           | (4)         | (39)        | -           | 32          |
| Net change in plan fiduciary net position                              | 19,245       | (21,418)     | 64,972       | 3,035       | 8,165       | 11,532      | 22,762      | (3,399)     | 5,464       | 23,763      |
| Plan fiduciary net position, beginning                                 | 259,242      | 280,660      | 215,688      | 212,653     | 204,488     | 189,956     | 167,194     | 170,703     | 165,239     | 144,476     |
| Plan fiduciary net position, ending (b)                                | 278,487      | 259,242      | 280,660      | 215,688     | 212,653     | 204,488     | 189,956     | 167,194     | 170,708     | 168,239     |
| Net pension liability (asset), ending (a) - (b)                        | \$ (164,646) | \$ (147,276) | \$ (171,686) | \$ (99,169) | \$ (96,703) | \$ (89,668) | \$ (76,230) | \$ (53,515) | \$ (58,171) | \$ (54,158) |
| Plan fiduciary net position as a percentage of total pension liability | 244.63%      | 231.51%      | 257.55%      | 185.11%     | 183.40%     | 178.08%     | 167.03%     | 147.37%     | 151.69%     | 147.43%     |
| Covered payroll  | 11,289       | 10,504       | 9,752        | 9,752       | 9,374       | 9,500       | 9,122       | 8,676       | 9,248       | 8,870       |
| Net pension liability (asset) as a percentage of covered payroll       | -1458.46%    | -1402.00%    | -1760.52%    | -1016.91%   | -1031.61%   | -943.73%    | -835.67%    | -605.92%    | -629.01%    | -599.30%    |

See Independent Auditor's Report and Notes to Required Supplementary Information



West Virginia Consolidated Public Retirement Board  
 Financial Section  
 Required Supplemental Information

SCHEDULES OF NET PENSION LIABILITY AND CHANGES IN NET PENSION LIABILITY (ASSET)

(In Thousands)  
 Fiscal years Ending June 30  
 (Continued)

|  | EMSRs      |           |             |            |            |            |          |          |          |          |  |
|--|------------|-----------|-------------|------------|------------|------------|----------|----------|----------|----------|--|
|  | 2023       | 2022      | 2021        | 2020       | 2019       | 2018       | 2017     | 2016     | 2015     | 2014     |  |
| Total pension liability:   |            |           |             |            |            |            |          |          |          |          |  |
| Service cost   | \$ 4,104   | \$ 4,012  | \$ 3,431    | \$ 3,286   | \$ 3,272   | \$ 3,189   | \$ 3,402 | \$ 3,187 | \$ 2,969 | \$ 3,010 |  |
| Interest   | 8,235      | 7,437     | 6,668       | 6,117      | 5,911      | 5,463      | 5,107    | (4,649)  | 4,345    | 3,879    |  |
| Differences between actual and expected experience                     | (2,573)    | 4,887     | 3,073       | (2,317)    | (2,208)    | 1,147      | (1,079)  | 724      | (1,067)  | -        |  |
| Change in benefit terms  | 2,433      | -         | 4,818       | -          | -          | -          | 1,545    | -        | -        | -        |  |
| Assumption changes   | (5,761)    | (5,073)   | (4,714)     | (4,317)    | (4,176)    | (3,653)    | (792)    | (2,558)  | (2,266)  | (1,747)  |  |
| Benefit payments   | 6,438      | 11,261    | 13,276      | 7,463      | 2,799      | 6,106      | 5,407    | 6,002    | 3,981    | 5,142    |  |
| Net change in total pension liability                                  | 112,367    | 101,095   | 87,830      | 80,427     | 77,628     | 71,482     | 66,075   | 60,073   | 56,092   | 50,950   |  |
| Total pension liability, beginning                                     | 118,805    | 112,367   | 101,106     | 87,830     | 80,427     | 77,628     | 71,482   | 66,073   | 60,073   | 56,092   |  |
| Total pension liability, ending (a)                                    | 3,662      | 3,610     | 3,523       | 3,078      | 2,844      | 2,765      | 2,859    | 2,744    | 2,607    | 2,442    |  |
| Plan fiduciary net position:   | 3,272      | 2,924     | 2,842       | 2,531      | 2,302      | 2,231      | 2,314    | 2,222    | 2,071    | 2,077    |  |
| Contributions - employer   | 9,618      | (7,672)   | 28,643      | 2,817      | 4,774      | 6,847      | 9,506    | 18       | 2,144    | 7,871    |  |
| Contributions - member   | (5,761)    | (5,075)   | (4,714)     | (4,317)    | (4,176)    | (3,653)    | (2,776)  | (2,558)  | (2,266)  | (1,749)  |  |
| Net investment income  | (63)       | (47)      | (78)        | (73)       | (77)       | (73)       | (63)     | (60)     | (45)     | (42)     |  |
| Benefit payments   | 2,232      | -         | -           | -          | -          | -          | -        | 1        | (1)      | 141      |  |
| Administrative expense   | 12,970     | (6,269)   | 30,216      | 4,036      | 5,667      | 8,137      | 11,850   | 2,377    | 4,510    | 10,743   |  |
| Other  | 112,961    | (119,221) | 89,005      | 84,969     | 79,302     | 71,165     | 59,315   | 56,937   | 53,646   | 42,903   |  |
| Net change in plan fiduciary net position                              | 112,961    | 119,221   | 89,005      | 84,969     | 79,302     | 71,165     | 59,315   | 56,938   | 52,427   | 42,903   |  |
| Plan fiduciary net position, beginning                                 | 125,931    | 112,961   | 119,221     | 89,005     | 84,969     | 79,302     | 71,165   | 59,315   | 56,937   | 53,646   |  |
| Prior period adjustment  | -          | -         | -           | -          | -          | -          | -        | 1        | (1,219)  | -        |  |
| Plan fiduciary net position, beginning, as restated                    | 112,961    | 119,221   | 89,005      | 84,969     | 79,302     | 71,165     | 59,315   | 56,938   | 52,427   | 42,903   |  |
| Plan fiduciary net position, ending (b)                                | \$ (7,126) | \$ (594)  | \$ (18,115) | \$ (1,173) | \$ (4,542) | \$ (1,674) | \$ 317   | \$ 6,700 | \$ 3,136 | \$ 2,446 |  |
| Net pension liability (asset), ending (a) - (b)                        | 106.00%    | 100.53%   | 117.92%     | 101.34%    | 105.65%    | 102.16%    | 99.56%   | 89.77%   | 94.78%   | 95.61%   |  |
| Plan fiduciary net position as a percentage of total pension liability | 33.642     | 34.071    | 29,395      | 26,506     | 26,024     | 27,421     | 26,992   | 25,963   | 24,145   | 22,548   |  |
| Covered payroll  | -21.18%    | -17.4%    | -61.63%     | -1.43%     | -17.45%    | -6.10%     | 1.17%    | -26.81%  | 12.99%   | 10.85%   |  |
| Net pension liability (asset) as a percentage of covered payroll       |            |           |             |            |            |            |          |          |          |          |  |

See Independent Auditor's Report and Notes to Required Supplementary Information

West Virginia Consolidated Public Retirement Board  
 Financial Section  
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SCHEDULES OF NET PENSION LIABILITY AND CHANGES IN NET PENSION LIABILITY (ASSET)

(In Thousands)  
 Fiscal years Ending June 30  
 (Continued)

|  | MPFRS       |            |             |            |            |            |            |            |          |          |      |  |
|--|-------------|------------|-------------|------------|------------|------------|------------|------------|----------|----------|------|--|
|  | 2023        | 2022       | 2021        | 2020       | 2019       | 2018       | 2017       | 2016       | 2015     | 2014     | 2013 |  |
| Total pension liability:   |             |            |             |            |            |            |            |            |          |          |      |  |
| Service cost   | \$ 3,744    | \$ 3,263   | \$ 2,343    | \$ 1,907   | \$ 1,734   | \$ 1,085   | \$ 984     | \$ 687     | \$ 485   | \$ 237   |      |  |
| Interest   | 1,513       | 1,178      | 812         | 637        | 447        | 280        | 214        | 131        | 74       | 28       |      |  |
| Differences between actual and expected experience                     | 907         | 206        | 333         | (373)      | 450        | 111        | 12         | 38         | 49       | -        |      |  |
| Change in benefit terms  | 1,497       | -          | -           | -          | -          | -          | -          | -          | -        | -        |      |  |
| Assumption changes   | -           | -          | 1,375       | -          | -          | -          | (320)      | -          | -        | -        |      |  |
| Benefit payments   | (698)       | (406)      | (314)       | (248)      | (298)      | (115)      | (79)       | (34)       | (49)     | (7)      |      |  |
| Net change in total pension liability                                  | 7,063       | 4,241      | 4,549       | 1,423      | 2,333      | 1,665      | 811        | 822        | 559      | 258      |      |  |
| Total pension liability, beginning                                     | 17,425      | 13,184     | 8,635       | 6,712      | 4,379      | 2,714      | 1,903      | 1,081      | 522      | 264      |      |  |
| Total pension liability, ending (a)                                    | 24,488      | 17,425     | 13,184      | 8,635      | 6,712      | 4,379      | 2,714      | 1,903      | 1,081    | 522      |      |  |
| Plan fiduciary net position:   |             |            |             |            |            |            |            |            |          |          |      |  |
| Contributions - employer   | 3,168       | 2,672      | 2,136       | 1,721      | 1,438      | 1,089      | 846        | 614        | 417      | 279      |      |  |
| Contributions - member   | 3,168       | 2,673      | 2,158       | 1,717      | 1,438      | 1,087      | 846        | 614        | 417      | 279      |      |  |
| Net investment income  | 2,536       | (1,830)    | 5,202       | 437        | 649        | 547        | 606        | 28         | 66       | 125      |      |  |
| Benefit payments   | (598)       | (406)      | (314)       | (248)      | (298)      | (115)      | (79)       | (34)       | (49)     | (7)      |      |  |
| Administrative expense   | (12)        | (10)       | (41)        | (35)       | (35)       | (23)       | (14)       | (11)       | (7)      | (3)      |      |  |
| Other  | 19          | -          | 68          | 1          | 28         | -          | -          | 1          | -        | -        |      |  |
| Net change in plan fiduciary net position                              | 8,281       | 3,009      | 9,209       | 3,592      | 3,220      | 2,555      | 2,205      | 1,272      | 844      | 673      |      |  |
| Plan fiduciary net position, beginning                                 | 27,197      | 24,098     | 14,889      | 11,297     | 8,077      | 5,522      | 3,917      | 2,916      | 1,202    | 529      |      |  |
| Prior period adjustment  | -           | -          | -           | -          | -          | -          | -          | (1)        | -        | -        |      |  |
| Plan fiduciary net position, beginning, as restated                    | 27,197      | 24,098     | 14,889      | 11,297     | 8,077      | 5,522      | 3,917      | 2,915      | 1,202    | 529      |      |  |
| Plan fiduciary net position, ending (b)                                | 35,478      | 27,197     | 24,098      | 14,889     | 11,297     | 8,077      | 5,522      | 3,917      | 2,046    | 1,202    |      |  |
| Net pension liability (asset), ending (a) - (b)                        | \$ (10,990) | \$ (9,772) | \$ (10,914) | \$ (6,251) | \$ (4,585) | \$ (1,698) | \$ (2,808) | \$ (1,114) | \$ (965) | \$ (680) |      |  |
| Plan fiduciary net position as a percentage of total pension liability | 144.86%     | 156.08%    | 182.78%     | 172.43%    | 168.31%    | 184.45%    | 203.46%    | 174.00%    | 189.27%  | 200.27%  |      |  |
| Covered payroll  | 34,242      | 28,785     | 21,972      | 17,831     | 15,132     | 10,418     | 7,898      | 5,483      | 3,784    | 1,833    |      |  |
| Net pension liability (asset) as a percentage of covered payroll       | -32.10%     | -34.05%    | -49.67%     | -35.07%    | -30.30%    | -35.39%    | -35.55%    | -25.59%    | -25.50%  | -37.10%  |      |  |

See Independent Auditor's Report and Notes to Required Supplementary Information

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Required Supplemental Information**

SCHEDULES OF NET PENSION LIABILITY AND CHANGES IN NET PENSION LIABILITY (ASSET)

(In Thousands)

Fiscal years Ending June 30

(Continued)

|  | NRPORS          |                 |                 |
|--|-----------------|-----------------|-----------------|
|  | 2023            | 2022            | 2021            |
| <b>Total pension liability:</b>  |                 |                 |                 |
| Service cost   | \$ 1,223        | \$ 1,095        | \$ 494          |
| Interest   | 2,323           | 2,126           | 18              |
| Differences between actual and expected experience                     | (1,106)         | (622)           | -               |
| Change in benefit terms  | -               | 441             | 25,978          |
| Assumption changes   | -               | -               | 1,960           |
| Benefit payments   | (480)           | (421)           | (10)            |
| <b>Net change in total pension liability</b>                           | <b>1,960</b>    | <b>2,619</b>    | <b>28,440</b>   |
| Total pension liability, beginning                                     | 31,059          | 28,440          | -               |
| <b>Total pension liability, ending (a)</b>                             | <b>33,019</b>   | <b>31,059</b>   | <b>28,440</b>   |
| <b>Plan fiduciary net position:</b>                                    |                 |                 |                 |
| Contributions - employer   | 856             | 779             | 332             |
| Contributions - member   | 678             | 615             | 263             |
| Net investment income  | 2,128           | (1,661)         | 2,996           |
| Benefit payments   | (480)           | (421)           | (10)            |
| Administrative expense   | (11)            | (10)            | -               |
| Other  | -               | 162             | 21,432          |
| <b>Net change in plan fiduciary net position</b>                       | <b>3,171</b>    | <b>(536)</b>    | <b>25,013</b>   |
| Plan fiduciary net position, beginning                                 | 24,477          | 25,013          | -               |
| Prior period adjustment  | -               | -               | -               |
| <b>Plan fiduciary net position, beginning, as restated</b>             | <b>24,477</b>   | <b>25,013</b>   | <b>-</b>        |
| <b>Plan fiduciary net position, ending (b)</b>                         | <b>27,648</b>   | <b>24,477</b>   | <b>25,013</b>   |
| <b>Net pension liability (asset), ending (a) - (b)</b>                 | <b>\$ 5,371</b> | <b>\$ 6,582</b> | <b>\$ 3,427</b> |
| Plan fiduciary net position as a percentage of total pension liability | 83.73%          | 78.81%          | 87.95%          |
| Covered payroll  | 6,589           | 6,224           | 6,220           |
| Net pension liability (asset) as a percentage of covered payroll       | 81.51%          | 105.76%         | 55.10%          |

*This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10 the Board will present information for the years for which information is available.*

See Independent Auditor's Report and Notes to Required Supplementary Information

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Required Supplemental Information**

SCHEDULES OF CONTRIBUTIONS

(In Thousands)

Fiscal Year Ended June 30,

|                   | Actuarially<br>Determined<br>Contribution | Actual<br>Contribution | Contribution<br>Deficiency<br>(Excess) | Covered Payroll | Actual<br>Contributions as<br>a % of Covered<br>Payroll |
|-------------------|---|------------------------|--|-----------------|---|
| <b>PERS</b>       |   |                        |  |                 |   |
| 2023              | \$ 98,415                                 | \$ 163,475             | \$ (65,060)                            | \$ 1,655,199    | 9.88 %  |
| 2022              | 98,477                                    | 167,761                | (69,284)                               | 1,611,398       | 10.41   |
| 2021              | 106,467                                   | 159,259                | (52,792)                               | 1,574,183       | 10.12   |
| 2020              | 109,904                                   | 155,230                | (45,326)                               | 1,497,636       | 10.37   |
| 2019              | 115,775                                   | 147,031                | (31,256)                               | 1,388,662       | 10.59   |
| 2018              | 124,363                                   | 152,541                | (28,178)                               | 1,430,577       | 10.66   |
| 2017              | 138,663                                   | 165,676                | (27,013)                               | 1,414,584       | 11.71   |
| 2016              | 149,481                                   | 186,867                | (37,386)                               | 1,392,113       | 13.42   |
| 2015              | 183,658                                   | 189,947                | (6,289)                                | 1,373,129       | 13.83   |
| 2014              | 189,303                                   | 194,728                | (5,425)                                | 1,389,850       | 14.01   |
| <b>TRS (1)</b>    |   |                        |  |                 |   |
| 2023              | \$ 407,183                                | \$ 452,521             | \$ (45,338)                            | \$ 1,686,598    | 26.83 %   |
| 2022              | 412,124                                   | 483,005                | (70,881)                               | 1,636,411       | 29.52   |
| 2021              | 418,494                                   | 417,334                | 1,160                                  | 1,604,576       | 26.01   |
| 2020              | 413,728                                   | 463,840                | (50,112)                               | 1,509,477       | 30.73   |
| 2019              | 433,203                                   | 481,986                | (48,783)                               | 1,404,586       | 34.32   |
| 2018              | 443,800                                   | 471,837                | (28,037)                               | 1,457,143       | 32.38   |
| 2017              | 413,976                                   | 451,447                | (37,471)                               | 1,505,080       | 29.99   |
| 2016              | 387,685                                   | 426,678                | (38,993)                               | 1,511,271       | 28.23   |
| 2015              | 454,721                                   | 490,640                | (35,919)                               | 1,481,786       | 33.11   |
| 2014              | 488,511                                   | 514,248                | (25,737)                               | 1,493,515       | 34.43   |
| <b>SPDDRS (2)</b> |   |                        |  |                 |   |
| 2023              | \$ 47                                     | \$ 40                  | \$ 7                                   | \$ 290          | 13.79 %   |
| 2022              | 17,798                                    | 17,842                 | (44)                                   | 353             | 5,054.39  |
| 2021              | 16,648                                    | 16,699                 | (51)                                   | 349             | 4,784.81  |
| 2020              | 13,187                                    | 13,246                 | (59)                                   | 514             | 2,577.04  |
| 2019              | 15,162                                    | 15,595                 | (433)                                  | 1,527           | 1,021.28  |
| 2018              | 24,675                                    | 24,829                 | (154)                                  | 2,963           | 837.97  |
| 2017              | 16,875                                    | 17,155                 | (280)                                  | 3,181           | 539.30  |
| 2016              | 13,209                                    | 13,977                 | (768)                                  | 3,713           | 376.43  |
| 2015              | 20,860                                    | 21,668                 | (808)                                  | 5,120           | 423.20  |
| 2014              | 25,146                                    | 26,218                 | (1,072)                                | 5,988           | 437.84  |

See Independent Auditor's Report and Notes to Required Supplementary Information

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Required Supplemental Information**

SCHEDULES OF CONTRIBUTIONS

(In Thousands)

Fiscal Year Ended June 30,

|                 | Actuarially<br>Determined<br>Contribution | Actual<br>Contribution | Contribution<br>Deficiency<br>(Excess) | Covered Payroll | Actual<br>Contributions as<br>a % of Covered<br>Payroll |
|-----------------|---|------------------------|--|-----------------|---|
| <b>SPRS</b>     |   |                        |  |                 |   |
| 2023            | \$ 12,937                                 | \$ 8,100               | \$ 4,837                               | \$ 38,809       | 20.87 %   |
| 2022            | 7,094                                     | 9,428                  | (2,334)                                | 35,120          | 26.85   |
| 2021            | 9,778                                     | 7,928                  | 1,850                                  | 34,946          | 22.69   |
| 2020            | 7,716                                     | 4,850                  | 2,866                                  | 33,904          | 14.31   |
| 2019            | 4,180                                     | 4,556                  | (376)                                  | 30,938          | 14.73   |
| 2018            | 4,726                                     | 4,205                  | 521                                    | 32,291          | 13.02   |
| 2017            | 4,427                                     | 3,657                  | 770                                    | 31,582          | 11.58   |
| 2016            | 3,402                                     | 3,887                  | (485)                                  | 31,792          | 12.23   |
| 2015            | 3,183                                     | 4,060                  | (877)                                  | 29,574          | 13.73   |
| 2014            | 3,363                                     | 4,049                  | (686)                                  | 27,701          | 14.62   |
| <b>DSRS (3)</b> |   |                        |  |                 |   |
| 2023            | \$ 10,985                                 | \$ 8,811               | \$ 2,174                               | \$ 65,637       | 13.42 %   |
| 2022            | 10,185                                    | 8,258                  | 1,927                                  | 62,284          | 13.26   |
| 2021            | 7,762                                     | 7,213                  | 549                                    | 59,289          | 12.17   |
| 2020            | 6,916                                     | 6,861                  | 55                                     | 57,698          | 11.89   |
| 2019            | 5,390                                     | 6,705                  | (1,315)                                | 53,676          | 12.49   |
| 2018            | 2,681                                     | 6,194                  | (3,513)                                | 49,915          | 12.41   |
| 2017            | 4,561                                     | 5,922                  | (1,361)                                | 51,004          | 11.61   |
| 2016            | 3,498                                     | 6,071                  | (2,573)                                | 49,081          | 12.37   |
| 2015            | 3,681                                     | 5,972                  | (2,291)                                | 46,634          | 12.81   |
| 2014            | 4,774                                     | 5,977                  | (1,203)                                | 45,106          | 13.25   |
| <b>JRS</b>      |   |                        |  |                 |   |
| 2023            | \$ 797                                    | \$ 797                 | \$ -                                   | \$ 11,289       | 7.06 %  |
| 2022            | 742                                       | 1,052                  | (310)                                  | 10,504          | 10.02   |
| 2021            | 838                                       | 886                    | (48)                                   | 9,752           | 9.09  |
| 2020            | 791                                       | 791                    | -                                      | 9,752           | 8.11  |
| 2019            | 779                                       | 779                    | -                                      | 9,374           | 8.31  |
| 2018            | 735                                       | 735                    | -                                      | 9,500           | 7.74  |
| 2017            | 709                                       | 739                    | (30)                                   | 9,122           | 8.10  |
| 2016            | 739                                       | 739                    | -                                      | 8,870           | 8.33  |
| 2015            | 2,845                                     | 2,845                  | -                                      | 9,248           | 30.76   |
| 2014            | 2,456                                     | 2,456                  | -                                      | 8,870           | 27.69   |

See Independent Auditor's Report and Notes to Required Supplementary Information

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Required Supplemental Information**

SCHEDULES OF CONTRIBUTIONS

(In Thousands)

Fiscal Year Ended June 30,

|               | Actuarially<br>Determined<br>Contribution | Actual<br>Contribution | Contribution<br>Deficiency<br>(Excess) | Covered Payroll | Actual<br>Contributions as<br>a % of Covered<br>Payroll |
|---------------|---|------------------------|--|-----------------|---|
| <b>EMSRs</b>  |   |                        |  |                 |   |
| 2023          | \$ 1,428                                  | \$ 3,662               | \$ (2,234)                             | \$ 33,642       | 10.89 %   |
| 2022          | 1,306                                     | 3,610                  | (2,304)                                | 34,071          | 10.60   |
| 2021          | 1,310                                     | 3,523                  | (2,213)                                | 29,395          | 11.99   |
| 2020          | 1,167                                     | 3,078                  | (1,911)                                | 26,536          | 11.60   |
| 2019          | 1,190                                     | 2,844                  | (1,654)                                | 26,024          | 10.93   |
| 2018          | 1,053                                     | 2,765                  | (1,712)                                | 27,421          | 10.08   |
| 2017          | 1,870                                     | 2,859                  | (989)                                  | 26,992          | 10.59   |
| 2016          | 1,311                                     | 2,744                  | (1,433)                                | 25,963          | 10.57   |
| 2015          | 1,198                                     | 2,607                  | (1,409)                                | 24,145          | 10.80   |
| 2014          | 1,561                                     | 2,442                  | (881)                                  | 22,548          | 10.83   |
| <b>MPFRs</b>  |   |                        |  |                 |   |
| 2023          | \$ 1,294                                  | \$ 3,168               | \$ (1,874)                             | \$ 34,242       | 9.25 %  |
| 2022          | 1,002                                     | 2,672                  | (1,670)                                | 28,785          | 9.28  |
| 2021          | 706                                       | 2,136                  | (1,430)                                | 21,972          | 9.72  |
| 2020          | 588                                       | 1,721                  | (1,133)                                | 17,831          | 9.65  |
| 2019          | 510                                       | 1,438                  | (928)                                  | 15,132          | 9.50  |
| 2018          | 324                                       | 1,089                  | (765)                                  | 10,448          | 10.42   |
| 2017          | 349                                       | 846                    | (497)                                  | 7,898           | 10.71   |
| 2016          | 239                                       | 644                    | (405)                                  | 5,483           | 11.75   |
| 2015          | 178                                       | 417                    | (239)                                  | 3,784           | 11.02   |
| 2014          | 88  | 279                    | (191)                                  | 1,833           | 15.22   |
| <b>NRPORS</b> |   |                        |  |                 |   |
| 2023          | \$ 829                                    | \$ 856                 | \$ (27)                                | \$ 6,589        | 12.99 %   |
| 2022          | 751                                       | 779                    | (28)                                   | 6,224           | 12.52   |
| 2021          | 356                                       | 332                    | 24                                     | 6,220           | 5.34  |

Notes:

- (1) Contributions for the Teachers Retirement System include employer contributions and interest from out-of-state services and surcharges on fire and casualty insurance policies which specifically identified to fund the plan per West Virginia State Code Section 33-3-14d and 33-33-33.
- (2) Contributions for SPDDRS include employer contributions and other payments designated by WV Code Section 15-2-26 – Payments to members for court attendance and mileage; rewards for apprehending wanted persons; fees for traffic accidents reports and photographs; fees from criminal history record reviews and challenges; or from any other sources designated by the superintendent.
- (3) Contributions for DSRS include employer contributions and various other fees designated for the fund from charges and fees per WV State Code Section 7-14E-2 and 17A-3-17 – Charges for obtaining reports (i.e., accident reports); fees from performing certain services (adult private employer finger printing for federal firearm permits, motor vehicle number identification, adult identification card, and photo-identification card); fees for nongovernmental background investigation reports; and fees for renewal of a Class A or G vehicle registration.

**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Required Supplemental Information**

SCHEDULES OF INVESTMENT RETURNS (1)  
Fiscal Years Ended June 30,

| Retirement System (2): | 2023  | 2022   | 2021   | 2020  | 2019  | 2018  | 2017   | 2016   | 2015  |
|------------------------|-------|--------|--------|-------|-------|-------|--------|--------|-------|
| PERS                   | 8.51% | -6.25% | 32.02% | 3.16% | 5.94% | 9.75% | 15.82% | -0.12% | 3.93% |
| TRS                    | 8.47% | -6.20% | 31.93% | 3.14% | 5.93% | 9.74% | 15.70% | -0.28% | 3.92% |
| SPDDRS                 | 8.49% | -6.17% | 31.99% | 3.18% | 5.78% | 9.83% | 15.71% | -0.21% | 3.92% |
| SPRS                   | 8.54% | -6.50% | 32.13% | 3.32% | 6.11% | 9.61% | 15.86% | -0.07% | 4.03% |
| DSRS                   | 8.53% | -6.37% | 32.07% | 3.22% | 6.01% | 9.69% | 15.83% | -0.04% | 3.97% |
| JRS                    | 8.54% | -6.33% | 32.09% | 3.24% | 5.97% | 9.77% | 15.88% | 0.10%  | 3.97% |
| EMSRS                  | 8.53% | -6.43% | 32.05% | 3.30% | 6.03% | 9.64% | 15.87% | 0.30%  | 4.04% |
| MPFRS                  | 8.66% | -7.03% | 31.86% | 3.49% | 6.72% | 8.86% | 15.72% | 1.13%  | 4.37% |
| NRPORS                 | 8.55% | -6.51% | 13.91% | n/a   | n/a   | n/a   | n/a    | n/a    | n/a   |

(1) This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, WV CPRB will present information for those years for which information is available.

(2) Annual money-weighted rate of return, net of investment expenses

**Notes To Required Supplementary Information - Pension**

**1 – ACTUARIAL ASSUMPTIONS AND METHODS**

The information presented in the Schedules of Net Pension Liability and Changes in Net Pension Liability (Asset) and Schedules of Investment Returns was based on the actuarial valuations as of July 1, 2022, and rolled forward to June 30, 2023, using the actuarial assumptions and methods described in Note 3 to the Financial Statements, Actuarial Valuations - Defined Benefit Plans.

**2 – HISTORICAL TREND INFORMATION**

Generally accepted accounting principles require 10 years of historical trend information to be included in the various schedules of RSI that are presented. Due to changes in actuarial methods and assumptions related to the implementation of new accounting standards during fiscal years ending June 30, 2015, and 2014, historical trend information is not readily available for fiscal years ending prior to June 30, 2014, and is not presented.

**3 – CHANGE IN ACTUARIAL ASSUMPTIONS**

The actuarial assumptions for mortality, withdrawal rates, disability rates, salary scales, and non-contributory service loads that were used in the total pension liability (asset) calculation were changed from June 30, 2019, to June 30, 2020, to reflect the most recent experience study for July 1, 2013, through June 30, 2018.

The actuarial assumptions for the discount rate and salary scales that were used in the total pension liability (asset) calculations were changed from June 30, 2023, to June 30, 2021, to reflect the most recent assumptions experience study for July 1, 2015, through June 30, 2020.





**SUPPLEMENTARY INFORMATION**



**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Supplementary Information**

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Schedule of Administrative Expenses  
(In Thousands)  
Year ended June 30, 2023

|   |                 |
|---|-----------------|
| Salaries                                    | \$ 4,630        |
| Employee Benefits                           | 530             |
| Occupancy                                   | 378             |
| Computer Services                           | 665             |
| Legal                                       | 214             |
| External Actuarial Services                 | 268             |
| Accounting, Auditing, and other consultants | 600             |
| Third Party Administrator's Fees*           | 83              |
| Disability Exams                            | 85              |
| Office Expense                              | 408             |
| Postage                                     | 167             |
| Insurance                                   | 37              |
| Travel                                      | 19              |
| Miscellaneous and other                     | 5               |
| <b>Total Administrative Expenses</b>        | <b>\$ 8,089</b> |

\* Third Party Administrative fees relate to the Teacher's Defined Contribution Retirement System only

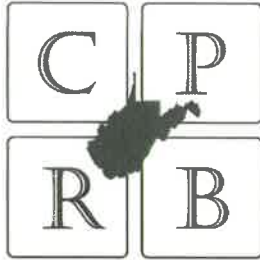
**West Virginia Consolidated Public Retirement Board**  
**Financial Section**  
**Supplementary Information**

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The following were the payments to consultants for the year ended June 30, 2023:

|                            |    |         |
|----------------------------|----|---------|
| <b>Legal Services:</b>     |    |         |
| Bowles Rice, LLP           | \$ | 76,271  |
| <b>Actuarial Services:</b> |    |         |
| Buck Consulting            | \$ | 267,798 |
| <b>Auditing Services:</b>  |    |         |
| Eide Bailly, LLP           | \$ | 211,000 |

# Investment Section



2023 ANNUAL COMPREHENSIVE FINANCIAL REPORT  
*For the Fiscal Year Ended June 30, 2023*

|    |   |
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| 87 | Report on Investment Activity                     |
| 89 | Investment Background, Philosophy, and Objectives |

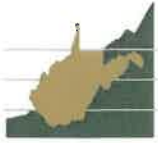
#### **Investment Pool Objectives, Financial Highlights, and Performance**

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## West Virginia Investment Management Board

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Charleston, West Virginia 25301

Phone: (304) 345-2672

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Website: [www.wvimb.org](http://www.wvimb.org)

December 18, 2023

Consolidated Public Retirement Board  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304

On behalf of the West Virginia Investment Management Board (WVIMB), it is with great pleasure that I submit the investment section of the West Virginia Consolidated Public Retirement Board's (WV CPRB) annual comprehensive financial report for the fiscal year ended June 30, 2023.

As described in more detail herein, the WVIMB is a public body corporate, an independent organization statutorily charged with the responsibility for investing all long-term assets of the State of West Virginia. Included in these assets are all nine of the defined benefit pension plans administered by the WV CPRB. As an investment fiduciary, the WVIMB's only focus is to invest the assets entrusted to it in the best interest of the beneficiaries. The WVIMB has established investment pools structured by specific asset classes. The WV CPRB's investments in the WVIMB's investment pools are carried at fair value using the net asset value per share as a practical expedient. Note that in this section, the defined benefit pension plans as a group are generally referred to as "Participant Plans." To a large extent, each participant plan's performance is a function of the asset classes in which it invests. As such, a review of asset class performance for the year may be helpful.

As the fiscal year ending June 30, 2023, unfolded it was initially unclear how markets would respond to an aggressive tightening cycle engineered by the U.S. Federal Reserve to bring inflation under control. After the first quarter, headline inflation had moderated but was still at a very high level of 8.2 percent. Following the lead of the U.S. Federal Reserve, central banks across the globe engaged in their own tightening campaigns to fight inflation. Tightenings invariably lead to recessions. With the looming prospect of a significant recession, all major markets were down through the first quarter of the fiscal year. As the fall transitioned to winter, however, inflation continued to moderate while GDP came in above expectations and unemployment remained low. Meanwhile, emerging markets were uplifted by China's decision to lift COVID restrictions and Europe's winter turned out to be milder than usual alleviating concerns over energy capacity. Capital markets, in general, responded with positive returns as the odds of only a mild recession, or none at all, improved. As spring unfolded the trend in inflation, growth and unemployment continued. The only hiccup in the flow of positive developments was the collapse of Silicon Valley Bank, a regional bank overly concentrated in the venture capital space. This development raised concerns about the banking sector, but it was quickly ameliorated when the Federal Reserve stepped in to backstop deposits. Importantly, no large money center banks were implicated as the GFC banking reforms proved effective. As the fiscal year came to a close, headline inflation had fallen to 3.0 percent and core inflation had also moderated to 4.8 percent. The unemployment rate remained low at 3.6 percent, while growth remained positive, although at a lower rate. Stock market returns continued their upward trajectory, ending the year on a positive note. U.S. stocks were up 19.0 percent (Russell 3000), and international stocks were up 13.1 percent (MSCI ACWI ex U.S. IMI). Fixed income was essentially flat, only down (4) basis points (Bloomberg U.S. Universal), but the outlook had improved significantly.

The WVIMB's performance relative to respective benchmarks was, generally, as expected or better. The WVIMB large-cap U.S. public stock portfolio returned 17.8 percent, underperforming its benchmark (S&P 500) by 1.8 percent. The non-large cap U.S. stock portfolio returned 24.5 percent, outperforming its benchmark (Russell 2500) by 10.9 percent. The WVIMB's international public stock portfolio returned 11.7 percent, underperforming its benchmark (MSCI ACWI ex U.S. IMI) by 1.4 percent. The fixed income portfolio generated a positive return of 1.6 percent, beating the benchmark (Bloomberg U.S. Universal) by 1.7 percent. Performance measurement of private market assets, which includes private equity, private real estate, and private credit, is fraught with measurement issues, so it is less meaningful over shorter time periods. Private equity returned 5.2 percent and real estate returned (5.4) percent. The private credit portfolio returned 3.5 percent for the year. The hedge fund portfolio, which is intended to be a diversifying component of the entire portfolio, returned 5.2 percent, which bettered its benchmark (HFRI FOF plus 1 percent) by 0.5 percent.

For general comparison purposes, the WVIMB uses the Public Employees' Retirement System (PERS) as a proxy for the other pension plans because of its similarity to other statewide public pension plans across the nation. As of June 30, 2023,

*The West Virginia Investment Management Board is dedicated to providing prudent, efficient and professional investment management on behalf of and in the best interest of the beneficiaries of the assets it is entrusted with.*

**West Virginia Consolidated Public Retirement Board**  
***Investment Section***  
***Investment Pool Objectives, Financial Highlights, and Performance***

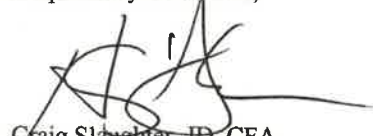
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the return for PERS was 8.6 percent, net of expenses, for the fiscal year. Of greater significance is the longer-term performance. In that regard, over the ten-year period ending June 30, 2023, the WVIMB's annualized return was 8.6 percent versus the base portfolio benchmark of 6.4 percent. This difference represents millions of dollars in value, added by Trustees and staff. The other defined benefit pension plans' returns for the fiscal year ending June 30, 2023, were essentially identical to PERS. Since asset allocations are virtually the same for each plan, any differences in the returns for the various pension plans are a function of the differences in the timing of cash flows into and out of each plan and relative levels of cash equivalent securities necessary to make benefit payments.

As an investor, the WVIMB's capacity to generate a return on assets is largely a function of growth in the world capital markets. Diversification helps reduce short-term volatility in the capital markets (commonly referred to as risk), but it is generally at the expense of long-term growth. Growth is the engine of returns. The WVIMB's asset allocation is tilted towards long-term growth for those assets with long time horizons, such as defined benefit pension plans. These plans are structured to spread risk and cost over multiple generations. The ideal target rate of return is one that fairly does this. While the WVIMB does not set that rate, it has an obligation to advise those that do. The WVIMB believes that the current target is attainable over very long time periods. In the meantime, the world can be a difficult, volatile place to navigate. While the U.S. capital markets have remained resilient in the face of inflation and central bank tightening, a recession of some degree is inevitable. In essence, a tightening of monetary policy is intended to recalibrate excess. Recessions do that. It is all part of the normal economic cycle. Also, natural, but less frequent, are changes in geopolitical structure. For many years, the U.S. was accepted as the dominant power in the world. With the growth of China, however, there is now much talk about what many call a "multi-polar" world, as China can in many ways, rival the U.S. as a dominant power. Countries tend to align themselves with the dominant compatible power, thus, dividing the world into multiple spheres of influence. Implicit in such a geopolitical structure, is a reduction in global trade and interaction. Last year I suggested that the global growth rate of GDP would suffer as a result. Nothing in the last year would cause me to recant.

There is much to be concerned about. Nevertheless, the future is unknowable. The WVIMB's portfolio is built for the long-term, seeking return from risky assets while diversifying to reduce risk. The WVIMB will continue to monitor its portfolio, moderate the structure on the margins to accommodate what we believe the markets are offering, but not so much as to compromise the portfolio's ability to take advantage of long-term growth. The staff looks forward to helping Trustees meet these challenges as fiscal year 2024 unfolds.

Respectfully Submitted,



Craig Slaughter, JD, CFA  
Executive Director/Chief Investment Officer  
West Virginia Investment Management Board

*The West Virginia Investment Management Board is dedicated to providing prudent, efficient and professional investment management on behalf of and in the best interest of the beneficiaries of the assets it is entrusted with.*



# West Virginia Consolidated Public Retirement Board

## *Investment Section*

### *Investment Background, Philosophy, and Objectives*

---

#### **West Virginia Investment Management Board – Organizational History**

The West Virginia Investment Management Board came into existence in the spring of 1997 after years of hard work modernizing the State's investment management structure. This structural modernization was widely acknowledged as a necessary precursor to the passage of a constitutional referendum to allow investment in stocks. The risks were perceived to be too great to be managed by anything but a modern, professional entity.

Although the West Virginia Investment Management Board's predecessors, the West Virginia State Board of Investments and the West Virginia Trust Fund, Inc., brought about vast improvements, each had significant shortcomings. However, with the creation of the West Virginia Investment Management Board, the State achieved a balance between control and independence that helps foster efficient and prudent investment management of long-term assets well into the future.

The beginning of the modern era in investment management by the State goes back to the late 1970s with the consolidation of the investment authority for the State's defined benefit plans, employment security plans, and other assets into a newly created West Virginia State Board of Investments. One of the goals of the legislation was to achieve economies of scale by commingling like assets.

Significantly, this newly created West Virginia Board of Investments was staffed by the State Treasury and the board itself was made up of the State's Governor, Treasurer, and Auditor.

Although a step in the right direction, the initial West Virginia State Board of Investments lacked proper or sufficient control features. After a few problems in the 1980s, principally involving its short-term pool, the Consolidated Fund, the board was expanded to seven members, adding four members from the private sector including an attorney experienced in financial matters and a Certified Public Accountant.

In the fall of 1990, the Legislature took a huge leap forward by creating a staff for the West Virginia State Board of Investments separate from the staff of the Treasury. This provided clear accountability to the Board of Investments – something that did not exist previously. Other very important control features included: (1) a statutory requirement for an Internal Auditor, (2) an annual external audit by a certified public accounting firm, and (3) monthly reporting requirements to government leaders in accordance with generally accepted accounting principles. This last feature dictated that all pools with a weighted average maturity in excess of 90 days must be marked-to-market (carried at market value), something that had not been done in the 1980s.

At the same time, the West Virginia Board of Investments made its first tepid step towards a diversified portfolio to be invested in stocks domiciled in the United States. Although it made some initial stock purchases in 1993, which were subsequently liquidated at a gain, the statute was challenged and the West Virginia Supreme Court ruled that investing in equities was unconstitutional.

In 1996, in an effort to satisfy the constitutional strictures, the Legislature carved out the pension and employment security funds with long time horizons and placed them in a trust to be managed by a new entity called the West Virginia Trust Fund, Inc. The creation of the trust as a vehicle to allow investment in stocks was also challenged and was struck down, failing to satisfy the constitutional concerns of the Supreme Court. It did, however, bring about three very important changes. The Legislature, demonstrating impeccable managerial foresight, granted the West Virginia Trust Fund, Inc. control over its own budget. With the same foresight, the Legislature imposed personal fiduciary liability on the board and staff of the West Virginia Trust Fund, Inc. Of no less importance was the creation of representative roles for members of the retirement systems and employment security systems.

With the failure of the West Virginia Trust Fund, Inc., it and the West Virginia State Board of Investments were replaced in 1997 by a new entity, the present day West Virginia Investment Management Board. The basic modernization process was complete. All of the improvements made in the Board of Investments and the West Virginia Trust Fund, Inc. were incorporated into the new entity.

The Legislature, for policy reasons, transferred the Consolidated Fund on July 8, 2005 to a newly created West Virginia Board of Treasury Investments, chaired by the State Treasurer. This was widely perceived as a policy move to ensure direct governmental oversight of State general and special revenue funds. The West Virginia Investment Management Board continues to manage the retirement funds, the employment security funds, and other assets with long time horizons.

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Background, Philosophy, and Objectives

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#### West Virginia Investment Management Board – Organizational History (continued)

In 2007, the Legislature expanded the investable universe of assets, increasing the allowable allocation to public equity and international securities, while also providing for a significant allocation to “alternative investments,” loosely defined as hedge funds and private equity. Then, in 2014, the Legislature eliminated the percentage limitations on allowable asset classes or securities, joining most of its peers in recognizing the prudent investor standard of care is the most effective control on investor behavior for institutions.

#### West Virginia Investment Management Board – Statutory Mandate

The bill creating the West Virginia Investment Management Board passed during the 1997 legislative session and is cited as the *West Virginia Investment Management Board Act* (the Act). The legislative findings of the Act make it clear that the West Virginia Investment Management Board was intended to be a professional, apolitical, financial management organization dedicated to the interests of the State’s teachers, public employees and workers in general. The Act was intended to give the West Virginia Investment Management Board “...the authority to develop, implement and maintain an efficient and modern system for the investment and management of the State’s money.” In order to accomplish this purpose, the Act further stated that the West Virginia Investment Management Board must “...operate as an independent board with its own full-time staff of financial professionals immune to changing political climates...” [*West Virginia Code §12-6-1(a)(b)*] The Act also mandates that the assets contributed by the public employee and employer to the 401(a) Plans and the assets of the Workers’ Compensation Fund and the Coal Workers’ Pneumoconiosis Fund, are “declared to be irrevocable trusts, available for no use or purpose other than for the benefit of those public employees...workers, miners and their beneficiaries...” [*West Virginia Code §12-6-1(c)(d)*] The West Virginia Investment Management Board is further “empowered by this Article to act as Trustee of the irrevocable trusts created by this Article, and to manage and invest other state funds.” [*West Virginia Code §12-6-1a(f)*]

The standard of care mandated by the Statute is that codified in the “Uniform Prudent Investor Act,” Article 6C of Chapter 44 of the *West Virginia Code*. The West Virginia Investment Management Board is further subject to the following requirements:

- (a) Trustees shall discharge their duties with respect to the 401(a) Plans for the exclusive purpose of providing benefits to participants and their beneficiaries;
- (b) Trustees shall diversify fund investments so as to minimize the risk of large losses unless, under the circumstances, it is clearly prudent not to do so;
- (c) Trustees shall defray reasonable expenses of investing and operating the funds under management;
- (d) Trustees shall discharge their duties in accordance with the trust documents and instruments governing the trusts or other funds under the management insofar as the documents and instruments are consistent with provisions of this Article; and
- (e) The duties of the Board apply only with respect to those assets deposited with or otherwise held by it. [*West Virginia Code §12-6-11*]

#### West Virginia Investment Management Board – Administrative Mandate

Governance of the West Virginia Investment Management Board is vested, by statute, in a thirteen-member Board of Trustees. Three members of the Board serve by virtue of their office: the Governor, the Auditor, and the Treasurer. The other ten are appointed by the Governor and confirmed by the Senate. All appointees must have experience in pension management, institutional management or financial markets. In addition, one must be an attorney experienced in finance and investment matters and another must be a Certified Public Accountant. Only six of the ten appointed Trustees may be from the same political party. The Governor serves as Chairman of the Board. A Vice-Chairman is elected by the Trustees. A Secretary, who need not be a member of the Board, is also elected by the Trustees to keep a record of the proceedings of the Board.

A member of each defined benefit retirement plan is designated by the Consolidated Public Retirement Board to represent the Participant Plans’ interests. Likewise, the West Virginia Insurance Commission designates a representative for the Coal Workers’ Pneumoconiosis Fund and the Workers’ Compensation Old Fund. Each of the Representatives may designate up to three persons to comprise a committee representing their respective plan’s beneficiaries. The Representatives and Committee

# **West Virginia Consolidated Public Retirement Board**

## *Investment Section*

### *Investment Background, Philosophy, and Objectives*

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#### **West Virginia Investment Management Board – Administrative Mandate (continued)**

Members do not have a vote but have the right to be heard at the annual meetings of the Board and are subject to the same code of conduct and requirements of confidentiality that apply to the Trustees.

The day-to-day management of the West Virginia Investment Management Board is delegated to the Executive Director who is appointed by the Board and serves at its will and pleasure. The Executive Director acts as an advisor to the Board on all matters.

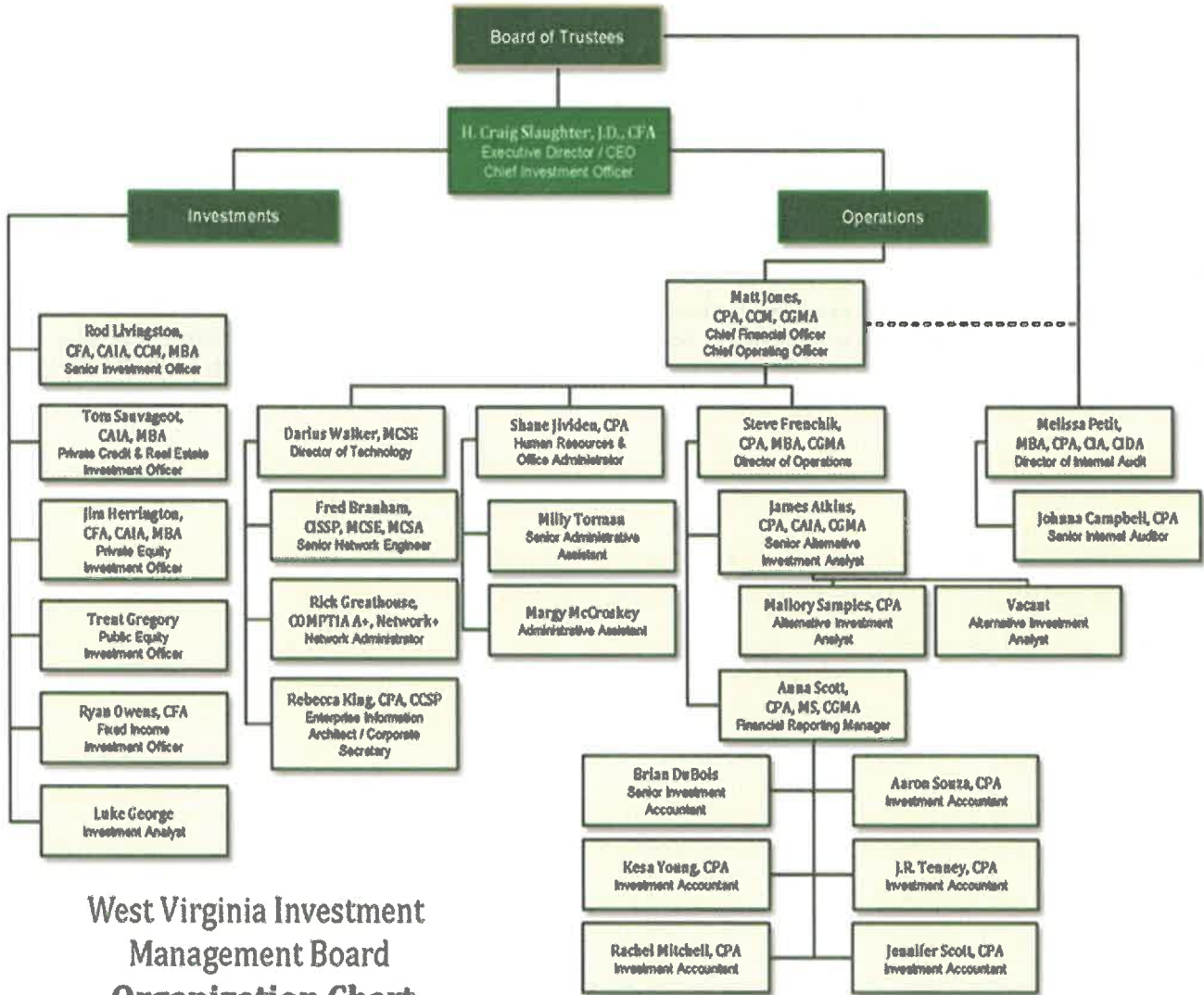
The staff of the West Virginia Investment Management Board is divided into two principal divisions—Investments and Operations.

The Operations Division is focused on providing the back office support necessary for the organization to function on a day-to-day basis. The Investments Division is structured to devote its time and resources to staying current with new developments and research in the investment field and being prepared to apply this knowledge to the investment of assets for the West Virginia Investment Management Board. See the organization chart on the next page.

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Background, Philosophy, and Objectives



West Virginia Investment  
Management Board  
Organization Chart

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Background, Philosophy, and Objectives

#### West Virginia Investment Management Board – Investment Philosophy

The primary objective of the investment pools is to provide benefits to its participants and beneficiaries. Based on general beliefs about the investment return available from a well-diversified, prudently invested portfolio, the Board has adopted specific investment objectives for each Participant Plan.

In order to achieve the investment objectives for each Participant Plan, the WVIMB relies on prevailing financial theory. This is a philosophy that is generally characterized by prudent diversification across different asset classes (stocks, bonds, cash, non-traditional, etc.) to reduce risk, taking into account each Participant Plan's time horizon, liquidity needs, financial condition (funded status), and return objectives in determining each Participant Plan's appropriate allocation to various assets. Diversification is not just limited to asset classes although it is, generally, considered the most significant factor. Other factors, including, but not limited to, geography/country, industry, maturity, and cash flow projections, are also considered from the Participant Plan's perspective. These factors may also dictate the extent to which the Participant Plan may be impacted by general business conditions. Importantly, the factors mentioned here are not intended to be limiting; rather, they are outlined as a general indication of the importance of diversification and customization to proper asset allocation. The Board determines the proper allocation among asset classes and managers, based on advice and analysis provided by the WVIMB and an external general investment consultant.

The Board recognizes that even though its investments may be subject to short-term volatility, it is critical that the WVIMB maintain a focus on longer time horizons for most Participant Plans, during which time the impact of short-term market volatility generally averages out. Impulsive reactions to short-term market events are not conducive to achieving long-term investment objectives. The strategies employed for each Participant Plan factor in an acceptable level of expected volatility given the relevant time horizon and liquidity needs for that Participant Plan. This prevents ad-hoc revisions to its philosophy and policies in reaction to either speculation or short-term market fluctuations. It is important to note that the Board recognizes that markets may become dislocated due to behavioral or other factors. When major dislocations occur, the Board has allowed for minor adjustments to the asset allocation for each Participant Plan through its Allocation Committee. In order to preserve a longer-term perspective generally, however, the Board of Trustees has adopted the following formal review schedule:

| <u>Agenda Item</u>                                | <u>Review Schedule</u>     |
|---|----------------------------|
| Investment Performance                            | Quarterly                  |
| Investment Policy                                 | Every Year                 |
| Allocation Ranges                                 | Every Three Years          |
| Asset Allocation Review for Each Participant Plan | At Least Every Three Years |

The Board may hire investment managers to implement its objectives. These managers will be given specific tactical roles within the overall strategic investment plan. Depending on their assignments, the managers may be judged on some or all of the following: (1) consistency of philosophy, style and key personnel, (2) performance relative to an appropriate index or proxy group, and (3) ability to add incremental value after costs. The Board and staff shall monitor performance and supervise all fund managers. In determining the appropriate level of risk, the Board considers, in addition to its fiduciary obligations and statutory requirements, each entity's purpose and characteristics, financial condition, liquidity needs, sources and level of contributions, income and general business conditions. Based upon these many factors, the Board identifies where either a more aggressive or more conservative investment approach is warranted, on an individual plan-by-plan basis.

#### INVESTMENT OBJECTIVES

*"Trustees, at the annual meeting...shall review, establish and modify, if necessary, the investment objectives of the individual participant plans, as incorporated in the investment policy statements of the respective trusts so as to provide for the financial security of the trust funds giving consideration to the following: (1) Preservation of Capital; (2) Diversification; (3) Risk Tolerance; (4) Rate of Return; (5) Stability; (6) Turnover; (7) Liquidity; and (8) Reasonable Costs of Fees." [West Virginia Code §12-6-11(a)(5)]*

# **West Virginia Consolidated Public Retirement Board**

## *Investment Section*

### *Investment Background, Philosophy, and Objectives*

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#### **PARTICIPANT PLANS**

The Board's objective is to manage the Participant Plans' moneys in an efficient and economical manner, managing risk as it seeks to achieve the specific goals set out in each Participant Plan's investment program.

#### **BASIS of PRESENTATION**

The retirement systems' investments reported in the investment section are presented in the same basis of accounting as described in Note 1 of the financial statements and prepared using a time-weighted rate of return based on the market rate of return.

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

#### EQUITY POOL

##### OBJECTIVES

The main objective for the Equity Pool is to provide for long-term growth for all participants. The Equity Pool is comprised of sub-components that enable adequate diversification when taken in aggregate. Separate investment pools have been established for each investment style or to comply with specific legal and accounting requirements.

Each Participant invested in the Equity Pool has its own Equity Strategic Allocation, set out in each Participant Plan Description within Appendix A of the WVIMB's Investment Policy Statement. The Allocation Committee has the authority to adjust a Participant's Equity Strategic Allocation 10 percent of the approved allocation. As an example, if a Participant has a 50 percent Strategic Allocation to Equity, the Strategic Range would be 45 to 55 percent.

The Allocation Committee also has the authority to adjust strategic asset class sub-components of the Equity Pool, as outlined below:

| Strategic Asset Class Sub-Components                                     | Neutral Target*   | Allocation Range   |
|--|---|--|
| Domestic vs. International   | Domestic vs. International<br>Percentage in MSCI ACWI (IMI)           | 0.5 to 2.5 times benchmark weight<br>Sum must equal 100% of Equity allocation                        |
| U.S. Large Cap vs. U.S. Non-Large Cap                                    | Large = 1 minus Non-Large<br>Non-Large = Russell 2500/Russell 3000    | 0.5 to 2.5 times benchmark weight<br>Sum must equal 100% of Domestic Equity allocation               |
| U.S. Non-Large Value vs. U.S. Non-Large Growth                           | Value vs. Growth<br>Percentage in Russell 2500                        | 0.5 to 2.5 times benchmark weight<br>Sum must equal 100% of Non-Large Cap Domestic Equity allocation |
| International Large Cap vs. International Small Cap vs. Emerging Markets | Large vs. Small vs. Emerging<br>Percentage in MSCI ACWI ex U.S. (IMI) | 0.5 to 2.5 times benchmark weight<br>Sum must equal 100% of International Equity allocation          |

\* The Neutral Target is established based on these index weights every June 30.

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

#### EQUITY POOL (Continued)

#### MANAGEMENT STRUCTURE

The equity pools are managed by the following firms, in accordance with a particular investment style.

| Manager   | Style   |
|---|---|
| <b>Portable Alpha Pool</b>  |   |
| <i>U.S. Large Capitalization</i>                                    |   |
| BlackRock Institutional Trust Company                               | Index Core  |
| Russell Investments Implementation Services                         | Equity Beta Replication (including margin accounts) |
| Hedge Fund Committee/Albourne America (consultant)                  | Alternative Risk Premia                             |
| <b>Large Cap Domestic Equity Pool</b>                               |   |
| BlackRock Institutional Trust Company                               | Index Core  |
| <b>Non-Large Domestic Equity Pool</b>                               |   |
| Cooper Creek Partners Management                                    | Value   |
| Westfield Capital Management Company                                | Growth at a Reasonable Price                        |
| <b>International Qualified and International Nonqualified Pools</b> |   |
| <i>International Large Capitalization</i>                           |   |
| Silchester International Investors                                  | All Country, Value                                  |
| <b>International Equity Pool</b>                                    |   |
| <i>International Large Capitalization</i>                           |   |
| LSV Asset Management  | All Country, Relative Value                         |
| <i>International Small Capitalization</i>                           |   |
| Acadian Asset Management  | All Country, Quantitative Value                     |
| Oberweis Asset Management   | All Country, Growth                                 |
| <i>Emerging Markets</i>   |   |
| Axiom International Investors                                       | Emerging Market, Growth at a Reasonable Price       |
| Numeric Investors   | Emerging Market, Quantitative Value                 |

#### FINANCIAL HIGHLIGHTS (in \$000s)

Audited financial statements are prepared for each of the equity pools and are available at [www.wvimbo.org](http://www.wvimbo.org). Financial Highlights for each pool are presented below:

#### Condensed Statement of Net Position

|  | Portable Alpha | Large Cap Domestic Equity | Non-Large Cap Domestic Equity |
|--|----------------|---------------------------|-------------------------------|
| Investments                              | \$ 5,072,107   | \$ 317,028                | \$ 1,155,544                  |
| Investment derivatives                   | 102,127        | -                         | -                             |
| Payable upon return of securities loaned | -              | -                         | (112,669)                     |
| Cash                                     | -              | -                         | 519                           |
| Cash due to broker for futures contracts | (51,165)       | -                         | -                             |
| Receivable for investments sold          | 175,000        | -                         | 10,281                        |
| Payable for investments purchased        | (7,350)        | -                         | (11,740)                      |
| Other assets and liabilities, net        | 4,917          | (15)                      | (1,807)                       |
| Net position - June 30, 2023             | \$ 5,295,636   | \$ 317,013                | \$ 1,040,128                  |



# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

#### EQUITY POOL (Continued)

#### FINANCIAL HIGHLIGHTS (continued in \$000s)

| <b>Condensed Statement of Net Position</b> | <b>International<br/>Qualified</b> | <b>International<br/>Nonqualified</b> | <b>International<br/>Equity</b> |
|--|------------------------------------|---------------------------------------|---------------------------------|
| Investments                                | \$ 1,263,214                       | \$ 203,149                            | \$ 2,819,438                    |
| Payable upon return of securities loaned   | -                                  | -                                     | (108,807)                       |
| Cash                                       | -                                  | -                                     | 12,984                          |
| Receivable for investments sold            | -                                  | -                                     | 9,990                           |
| Payable for investments purchased          | -                                  | -                                     | (9,878)                         |
| Other assets and liabilities, net          | (43)                               | (7)                                   | 17,604                          |
| Net position - June 30, 2023               | <u>\$ 1,263,171</u>                | <u>\$ 203,142</u>                     | <u>\$ 2,741,331</u>             |

#### Investments

#### Portable Alpha

|   | <b>Fair Value</b>   | <b>Percent of<br/>Securities</b> |
|---|---------------------|----------------------------------|
| Notional value of S&P 500 derivatives               | \$ 3,253,096        | 62.9%                            |
| S&P 500 index fund                                  | 1,679,958           | 32.4                             |
| Total S&P 500 exposure                              | <u>4,933,054</u>    | <u>95.3</u>                      |
| Margin accounts:                                    |                     |                                  |
| Money market mutual fund                            | 618,400             | 12.0                             |
| Enhanced cash collateral                            | 344,305             | 6.7                              |
| Downside protection (U.S. TIPS and Treasuries)      | 429,327             | 8.3                              |
| Total available margin                              | <u>1,392,032</u>    | <u>27.0</u>                      |
| Alternative risk premia funds                       | 1,932,117           | 37.3                             |
| Money market mutual fund                            | 68,000              | 1.3                              |
| Total investment exposure                           | <u>8,325,203</u>    | <u>160.9</u>                     |
| Reconciliation to total investments:                |                     |                                  |
| Less: Notional value of S&P 500 derivatives         | (3,253,096)         | (62.9)                           |
| Add: Unrealized appreciation of S&P 500 derivatives | 102,127             | 2.0                              |
| Total   | <u>\$ 5,174,234</u> | <u>100.0%</u>                    |

#### Investments

#### Large Cap Domestic Equity

|                          | <b>Fair Value</b> | <b>Percent of<br/>Securities</b> |
|--------------------------|-------------------|----------------------------------|
| S&P 500 index fund       | \$ 313,924        | 99.0%                            |
| Money market mutual fund | 3,104             | 1.0                              |
|                          | <u>317,028</u>    | <u>100.0%</u>                    |

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

#### EQUITY POOL (Continued)

##### FINANCIAL HIGHLIGHTS (continued in \$000s)

| Investments   | Non-Large Cap Domestic Equity |                       |
|---|-------------------------------|-----------------------|
|   | Fair Value                    | Percent of Securities |
| Equity sector exposure:                                     |                               |                       |
| Basic Materials   | \$ 50,808                     | 4.4%                  |
| Communications Services                                     | 13,656                        | 1.2                   |
| Consumer Discretionary                                      | 290,245                       | 25.1                  |
| Consumer Staples  | 29,380                        | 2.5                   |
| Energy  | 43,257                        | 3.7                   |
| Financial Services  | 42,862                        | 3.7                   |
| Health Care   | 119,349                       | 10.3                  |
| Industrials   | 178,728                       | 15.5                  |
| Real Estate   | 9,134                         | 0.8                   |
| Technology  | 171,606                       | 14.9                  |
| Utilities   | 17,638                        | 1.5                   |
| Total equities  | 966,663                       | 83.6                  |
| Money market mutual funds                                   | 76,212                        | 6.6                   |
| Investments made with cash collateral for securities loaned | 112,669                       | 9.8                   |
| Total   | \$ 1,155,544                  | 100.0%                |

| Investments               | International Qualified |                       | International Nonqualified |                       |
|---------------------------|-------------------------|-----------------------|----------------------------|-----------------------|
|                           | Fair Value              | Percent of Securities | Fair Value                 | Percent of Securities |
| MSCI EAFE commingled fund | \$ 1,263,214            | 100.0%                | \$ 203,149                 | 100.0%                |

| Investments                              | International Equity |                       |
|--|----------------------|-----------------------|
|  | Fair Value           | Percent of Securities |
| International equities country exposure: |                      |                       |
| Australia                                | \$ 73,474            | 2.6%                  |
| Brazil                                   | 112,215              | 4.0                   |
| Canada                                   | 116,201              | 4.1                   |
| China                                    | 365,715              | 13.0                  |
| France                                   | 137,598              | 4.9                   |
| Germany                                  | 88,514               | 3.1                   |
| Hong Kong                                | 46,087               | 1.6                   |
| India                                    | 199,289              | 7.1                   |
| Japan                                    | 287,698              | 10.2                  |
| Korea                                    | 202,487              | 7.2                   |
| Sweden                                   | 55,009               | 2.0                   |
| Switzerland                              | 73,418               | 2.6                   |
| Taiwan                                   | 214,790              | 7.6                   |
| United Kingdom                           | 187,001              | 6.6                   |
| All others (none greater than 2%)        | 530,624              | 18.8                  |
| Total international equities             | 2,690,120            | 95.4                  |
| Money market mutual fund                 | 20,511               | 0.7                   |
| Securities lending collateral            | 108,807              | 3.9                   |
| Total                                    | \$ 2,819,438         | 100.0%                |

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

#### EQUITY POOL (Continued)

##### FINANCIAL HIGHLIGHTS (continued in \$000s)

###### Progression of Net Position

|                                     | Portable Alpha | Large Cap Domestic Equity | Non-Large Cap Domestic Equity |
|-------------------------------------|----------------|---------------------------|-------------------------------|
| Net position - June 30, 2022        | \$ 4,750,413   | \$ 308,818                | \$ 853,803                    |
| Net investment income               | 856,445        | 53,782                    | 213,044                       |
| Net decrease from unit transactions | (311,222)      | (45,587)                  | (26,719)                      |
| Net position - June 30, 2023        | \$ 5,295,636   | \$ 317,013                | \$ 1,040,128                  |

###### Progression of Net Position

|                                     | International Qualified | International Nonqualified | International Equity |
|-------------------------------------|-------------------------|----------------------------|----------------------|
| Net position - June 30, 2022        | \$ 1,185,860            | \$ 183,575                 | \$ 2,794,160         |
| Net investment income               | 196,955                 | 29,512                     | 282,984              |
| Net decrease from unit transactions | (119,644)               | (9,945)                    | (335,813)            |
| Net position - June 30, 2023        | \$ 1,263,171            | \$ 203,142                 | \$ 2,741,331         |

#### INVESTMENT PERFORMANCE

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of investment advisor fees.

| Period      | Portable Alpha |         | Large Cap Domestic Equity |         | Non-Large Cap Domestic Equity |              |
|-------------|----------------|---------|---------------------------|---------|-------------------------------|--------------|
|             | Actual         | S&P 500 | Actual                    | S&P 500 | Actual                        | Russell 2500 |
| One-year    | 17.7%          | 19.6%   | 19.5%                     | 19.6%   | 24.5%                         | 13.6%        |
| Three-year  | 14.5%          | 14.6%   | 14.5%                     | 14.6%   | 15.1%                         | 12.3%        |
| Five-year   | N/A            | N/A     | 12.1%                     | 12.3%   | 7.3%                          | 6.5%         |
| Ten-year    | N/A            | N/A     | 12.8%                     | 12.9%   | 9.9%                          | 9.4%         |
| Twenty-year | N/A            | N/A     | 10.1%                     | 10.1%   | 10.4%                         | 9.9%         |

| Period      | International Qualified |           | International Nonqualified |           | International Equity |                         |
|-------------|-------------------------|-----------|----------------------------|-----------|----------------------|-------------------------|
|             | Actual                  | MSCI EAFE | Actual                     | MSCI EAFE | Actual               | MSCI ACWI ex U.S.(IMI)* |
| One-year    | 17.6%                   | 19.4%     | 17.0%                      | 19.4%     | 9.1%                 | 13.1%                   |
| Three-year  | 11.7%                   | 9.5%      | 11.5%                      | 9.5%      | 7.4%                 | 7.9%                    |
| Five-year   | 4.3%                    | 4.9%      | 4.0%                       | 4.9%      | 3.7%                 | 3.9%                    |
| Ten-year    | 6.7%                    | 5.9%      | 6.5%                       | 5.9%      | 5.5%                 | 5.3%                    |
| Twenty-year | 9.3%                    | 7.0%      | 9.0%                       | 7.0%      | 7.2%                 | 7.2%                    |

\*Prior to January 2014, the International Equity Pool index was the MSCI ACWI ex U.S. (Standard).

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

#### EQUITY POOL (Continued)

##### EXPENSES

The WVIMB charges each investment pool for its direct investment-related expenses, such as investment advisor fees, custodian bank fees, and certain professional service fees, and an allocated share of other expenses. Expense ratios and trading costs do not reflect the pool's proportionate share of expenses of the underlying investee funds. The Equity Pool's expenses for the year, divided by the average net position, are as follows:

| <b>Expense Ratios<br/>(in basis points)</b> | Portable<br>Alpha | Large Cap<br>Domestic<br>Equity | Non-Large<br>Cap Domestic<br>Equity | International<br>Qualified | International<br>Nonqualified | International<br>Equity |
|---|-------------------|---------------------------------|-------------------------------------|----------------------------|-------------------------------|-------------------------|
| Investment advisor fees                     | 2.2               | 0.8                             | 89.5                                | 51.5                       | 59.6                          | 49.8                    |
| Trustee fees                                | 0.0*              | 0.0*                            | 0.0*                                | 0.0*                       | 0.0*                          | 0.0*                    |
| Custodian bank fees                         | 0.0*              | 0.0*                            | 0.4                                 | N/A                        | N/A                           | 4.5                     |
| Management fees                             | 2.4               | 2.4                             | 2.4                                 | 2.4                        | 2.4                           | 2.4                     |
| Fiduciary bond fees                         | 0.0*              | 0.0*                            | 0.0*                                | 0.0*                       | 0.0*                          | 0.0*                    |
| Professional service fees                   | 0.9               | 0.6                             | 0.5                                 | 0.5                        | 0.5                           | 0.6                     |
| <b>Total</b>                                | <b>5.5</b>        | <b>3.8</b>                      | <b>92.8</b>                         | <b>54.4</b>                | <b>62.5</b>                   | <b>57.3</b>             |

\* Expense Ratio rounds to less than 0.1 basis points.

| <b>Trading Costs<br/>(in \$000s)</b> | Portable<br>Alpha | Large Cap<br>Domestic<br>Equity | Non-Large<br>Cap Domestic<br>Equity | International<br>Qualified | International<br>Nonqualified | International<br>Equity |
|--------------------------------------|-------------------|---------------------------------|-------------------------------------|----------------------------|-------------------------------|-------------------------|
| Net commission costs                 | \$ 297            | N/A                             | \$ 1,888                            | N/A                        | N/A                           | \$ 3,179                |

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

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#### Short-Term Fixed Income Pool

##### OBJECTIVES

The Short-Term Fixed Income Pool was created to maintain sufficient liquidity to meet the daily disbursements requested by the Participants and to invest any contributions until the time the money is transferred to other asset classes without sustaining capital losses and while earning a small return above inflation. The Short-Term Fixed Income Pool is structured as a money market fund where the goal is a stable dollar value per share, thus preserving principal. The pool's risk factor is low and managed through numerous maturity restrictions, diversification guidelines, and credit limits. The participants are paid on an income basis that includes interest income net of expenses.

##### MANAGEMENT STRUCTURE

The Short-Term Fixed Income Pool is managed by JPMorgan Investment Advisors.

##### FINANCIAL HIGHLIGHTS (in \$000s)

Audited financial statements for the Short-Term Fixed Income Pool are available at [www.wvimb.org](http://www.wvimb.org). Financial Highlights are presented below.

##### Condensed Statement of Net Position

|                                   |    |                |
|-----------------------------------|----|----------------|
| Investments                       | \$ | 186,609        |
| Other assets and liabilities, net |    | (11)           |
| Net position - June 30, 2023      | \$ | <u>186,598</u> |

##### Investments

|                              | Fair Value | Percent of Securities |
|------------------------------|------------|-----------------------|
| Repurchase agreement         | \$ 22,771  | 12.2%                 |
| U.S. Government agency bonds | 94,933     | 50.9                  |
| U.S. Treasury bonds          | 69,905     | 36.9                  |
| Total                        | \$ 187,609 | <u>100.0%</u>         |

##### Progression of Net Position

|                                     |    |                |
|-------------------------------------|----|----------------|
| Net position - June 30, 2022        | \$ | 145,419        |
| Net investment income               |    | 5,743          |
| Distributions to unitholders        |    | (5,743)        |
| Net increase from unit transactions |    | 41,179         |
| Net position - June 30, 2023        | \$ | <u>186,598</u> |

**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

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**Short-Term Fixed Income Pool (Continued)**

**INVESTMENT PERFORMANCE**

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of investment advisor fees.

| Period      | Actual | FTSE 3 Month T-Bill* |
|-------------|--------|----------------------|
| One-year    | 3.7%   | 3.8%                 |
| Three-year  | 1.3%   | 1.3%                 |
| Five-year   | 1.5%   | 1.6%                 |
| Ten-year    | 1.0%   | 1.0%                 |
| Twenty-year | 1.4%   | 1.4%                 |

*\*Prior to January 2014, the Short-Term Fixed Income Pool index was the FTSE 3 Month T-Bill plus 15 basis points.*

**EXPENSES**

The WVIMB charges the pool for its direct investment-related expenses, such as investment advisor fees and custodian bank fees. Expense ratios do not reflect the pool's proportionate share of expenses of the underlying investee funds. The Short-Term Fixed Income Pool's expenses for the year, divided by the average net position, are as follows:

**Expense Ratios (in basis points)**

|                         |            |
|-------------------------|------------|
| Investment advisor fees | 5.0        |
| Custodian bank fees     | 0.5        |
| <b>Total</b>            | <b>5.5</b> |

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

#### FIXED INCOME POOL

##### OBJECTIVES

The main objectives for the Fixed Income Pool are to generate investment income, provide stability, and enhance diversification but not at the expense of total return. Separate investment pools have been established for particular investment styles or to comply with specific accounting requirements. The strategic asset class, the Neutral Target allocation to the sub-component of the strategic asset class, as well as the approved Allocation Ranges within which the Allocation Committee can operate, are outlined below:

| Category                  | Strategic Allocation | Allocation Range    |
|---------------------------|----------------------|---------------------|
| Core Fixed Income         | --                   | --                  |
| Total Return Fixed Income | --                   | --                  |
| Fixed Income Pool         | 20.0%                | +/- 5% (15% to 25%) |

*Note: Each Participant has its own unique Strategic Allocation. The above example is for clarification purposes only.*

| Neutral Target                | Allocation Range                                   |
|-------------------------------|--|
| 30% Core Fixed Income         | Minimum 20% to Maximum 70%                         |
| 70% Total Return Fixed Income | Minimum 30% to Maximum 80%                         |
|                               | Sum must equal 100% of the Fixed Income allocation |

##### MANAGEMENT STRUCTURE

The fixed income pools are managed by the following firms, in accordance with a particular investment style.

| Manager                               | Style                         |
|---------------------------------------|-------------------------------|
| <b>Total Return Fixed Income Pool</b> |                               |
| Western Asset Management Company      | Core Plus Fixed Income        |
| Dodge & Cox                           | Core Plus Fixed Income        |
| Franklin Templeton Investments        | Emerging Markets Fixed Income |
| <b>Core Fixed Income Pool</b>         |                               |
| JPMorgan Investment Advisors          | Core Fixed Income             |

##### FINANCIAL HIGHLIGHTS (in \$000s)

Audited financial statements are prepared for each of the fixed income pools and are available at [www.wvimb.org](http://www.wvimb.org). Financial Highlights for each pool are presented below.

##### Condensed Statement of Net Position

|  | Total Return Fixed Income | Core Fixed Income |
|--|---------------------------|-------------------|
| Investments                              | \$ 2,382,426              | \$ 1,899,125      |
| Investment derivatives                   | (9,863)                   | -                 |
| Payable upon return of securities loaned | (91,316)                  | (85,912)          |
| Cash                                     | 24,924                    | 12                |
| Receivable for investments sold          | 2,779                     | 1,563             |
| Payable for investments purchased        | (40,650)                  | (32,425)          |
| Other assets and liabilities, net        | 17,828                    | 12,694            |
| Net position – June 30, 2023             | \$ 2,286,128              | \$ 1,795,057      |

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

#### FIXED INCOME POOL (Continued)

##### FINANCIAL HIGHLIGHTS (continued in \$000s)

###### Investments

|                                    | Total Return Fixed Income |                          | Core Fixed Income   |                          |
|------------------------------------|---------------------------|--------------------------|---------------------|--------------------------|
|                                    | Fair Value                | Percentage of Securities | Fair Value          | Percentage of Securities |
| Bank loan                          | \$ 2,661                  | 0.1%                     | \$ -                | 0.0%                     |
| Commingled debt funds              | 155,511                   | 6.6                      | -                   | 0.0                      |
| Corporate asset backed issues      | 54,378                    | 2.3                      | 166,971             | 8.8                      |
| Corporate CMO                      | 68,964                    | 2.9                      | 77,156              | 4.1                      |
| Corporate preferred security       | 11,069                    | 0.5                      | -                   | 0.0                      |
| Foreign asset backed issues        | 70,488                    | 3.0                      | 2,281               | 0.1                      |
| Foreign corporate bonds            | 320,507                   | 13.5                     | 121,780             | 6.4                      |
| Foreign currency forward contracts | (1,705)                   | (0.1)                    | -                   | 0.0                      |
| Foreign equity investments         | 620                       | 0.0                      | -                   | 0.0                      |
| Foreign government bonds           | 252,975                   | 10.7                     | 3,213               | 0.2                      |
| Futures contracts                  | (207)                     | 0.0                      | -                   | 0.0                      |
| Money market mutual fund           | 26,041                    | 1.1                      | 40,206              | 2.1                      |
| Municipal bonds                    | 20,121                    | 0.8                      | 9,834               | 0.5                      |
| Option contracts purchased         | 2,295                     | 0.1                      | -                   | 0.0                      |
| Option contracts written           | (6,037)                   | (0.3)                    | -                   | 0.0                      |
| Repurchase agreement               | 4,300                     | 0.2                      | -                   | 0.0                      |
| Securities lending collateral      | 91,316                    | 3.8                      | 85,912              | 4.5                      |
| Swaps                              | (4,209)                   | (0.2)                    | -                   | 0.0                      |
| U.S. corporate bonds               | 441,684                   | 18.6                     | 278,937             | 14.7                     |
| U.S. government agency bonds       | 3,359                     | 0.1                      | -                   | 0.0                      |
| U.S. government agency CMO         | 87,087                    | 3.7                      | 115,775             | 6.1                      |
| U.S. government agency MBS         | 495,973                   | 21.0                     | 386,105             | 20.3                     |
| U.S. Treasury issues               | 275,372                   | 11.6                     | 610,955             | 32.2                     |
| <b>Total</b>                       | <b>\$ 2,372,563</b>       | <b>100.0%</b>            | <b>\$ 1,899,125</b> | <b>100.0%</b>            |

###### Progression of Net Position

|  | Total Return Fixed Income | Core Fixed Income   |
|--|---------------------------|---------------------|
| Net position - June 30, 2022                   | \$ 2,755,235              | \$ 1,188,645        |
| Net investment income (loss)                   | 42,428                    | (2,139)             |
| Net increase (decrease) from unit transactions | (511,535)                 | 608,551             |
| <b>Net position - June 30, 2023</b>            | <b>\$ 2,286,128</b>       | <b>\$ 1,795,057</b> |

#### INVESTMENT PERFORMANCE

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of investment advisor fees.

| Period      | Total Return Fixed Income |                                | Core Fixed Income |                               |
|-------------|---------------------------|--------------------------------|-------------------|-------------------------------|
|             | Actual                    | Bloomberg U.S. Universal Bond* | Actual            | Bloomberg U.S. Aggregate Bond |
| One-year    | 2.6%                      | (0.0)%                         | (0.1)%            | (0.9)%                        |
| Three-year  | (1.2)%                    | (3.4)%                         | (2.8)%            | (4.0)%                        |
| Five-year   | 1.8%                      | 1.0%                           | 1.6%              | 0.8%                          |
| Ten-year    | 2.6%                      | 1.8%                           | 2.1%              | 1.5%                          |
| Twenty-year | 4.0%                      | 3.4%                           | N/A               | N/A                           |

\* Prior to April 2008, the Total Return Fixed Income Pool index was a custom index.



**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

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**FIXED INCOME POOL (Continued)**

**EXPENSES**

The WVIMB charges each investment pool for its direct investment-related expenses, such as investment advisor fees, custodian bank fees, and certain professional service fees, and an allocated share of other expenses. Expense ratios and trading costs do not reflect the pool's proportionate share of expenses of the underlying investee funds. The Fixed Income Pools' expenses for the operating period, divided by the average net position, are as follows:

| <b>Expense Ratios (in basis points)</b> | <b>Total Return<br/>Fixed Income</b> | <b>Core Fixed<br/>Income</b> |
|---|--------------------------------------|------------------------------|
| Investment advisor fees                 | 21.9                                 | 15.0                         |
| Trustee fees                            | 0.0*                                 | 0.0*                         |
| Custodian bank fees                     | 0.5                                  | 0.3                          |
| Management fees                         | 2.4                                  | 2.4                          |
| Fiduciary bond fees                     | 0.0*                                 | 0.0*                         |
| Professional service fees               | 0.5                                  | 0.5                          |
| <b>Total</b>                            | <b>25.3</b>                          | <b>18.2</b>                  |

\* Expense Ratio rounds to less than 0.1 basis points.

| <b>Trading Costs<br/>(in \$000s)</b> | <b>Total Return<br/>Fixed Income</b> | <b>Core Fixed<br/>Income</b> |
|--------------------------------------|--------------------------------------|------------------------------|
| Commission costs                     | \$ 1,527                             | N/A                          |

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

#### TIPS POOL

##### OBJECTIVES

The TIPS Pool was established to offer an additional level of diversification over and above nominal fixed income securities in an attempt to mitigate the risk of inflation. The main objective for the pool is to generate a return that exceeds the rate of inflation over a market cycle, to provide investment income and stability of principal, and to diversify interest rate exposure.

##### MANAGEMENT STRUCTURE

The TIPS Pool was managed by BlackRock Institutional Trust Company through May 24, 2023. Effective May 25, 2023, assets are managed by Northern Trust Investments.

##### FINANCIAL HIGHLIGHTS (in \$000s)

Audited financial statements for the TIPS Pool are available at [www.wvimb.org](http://www.wvimb.org). Financial Highlights are presented below.

##### Condensed Statement of Net Position

|                                   |    |         |
|-----------------------------------|----|---------|
| Investments                       | \$ | 396,328 |
| Receivable for investments sold   |    | 11,150  |
| Payable for investments purchased |    | (6,702) |
| Other liabilities                 |    | 1,012   |
| Net position - June 30, 2023      | \$ | 401,788 |

##### Investments

|  | Fair Value | Percent of Securities |
|--|------------|-----------------------|
| Money market mutual fund                     | \$ 128     | 0.0%                  |
| U.S. Treasury inflation protected securities | 396,200    | 100.0                 |
| Total  | \$ 396,328 | 100.0%                |

##### Progression of Net Position

|                                     |    |          |
|-------------------------------------|----|----------|
| Net position - June 30, 2022        | \$ | 440,728  |
| Net investment loss                 |    | (6,840)  |
| Net decrease from unit transactions |    | (32,100) |
| Net position - June 30, 2023        | \$ | 401,788  |

##### INVESTMENT PERFORMANCE

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of investment advisor fees.

| Period     | Actual | Bloomberg 1-10 Year U.S. TIPS |
|------------|--------|-------------------------------|
| One-year   | (1.4)% | (1.4)%                        |
| Three-year | (0.1)% | (0.1)%                        |
| Five-year  | 2.6%   | 2.5%                          |
| Ten-year   | 2.1%   | 2.1%                          |

\*Prior to June 2023, the TIPS index was the Bloomberg U.S. Treasury Inflation Protection Index.

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

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#### TIPS POOL (Continued)

#### EXPENSES

The WVIMB charges the pool for its direct investment-related expenses, such as investment advisor fees, custodian bank fees, and certain professional service fees, and an allocated share of other expenses. Expense ratios do not reflect the pool's proportionate share of expenses of the underlying investee funds. The TIPS Pool's expenses for the operating period, divided by the average net position, are as follows:

#### Expense Ratios (in basis points)

|                           |            |
|---------------------------|------------|
| Investment advisor fees   | 1.7        |
| Trustee fees              | 0.0*       |
| Custodian bank fees       | 0.0*       |
| Management fees           | 2.4        |
| Fiduciary bond fees       | 0.0*       |
| Professional service fees | 0.8        |
| Total                     | <u>4.9</u> |

\* Expense Ratio rounds to less than 0.1 basis points.

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

#### PRIVATE MARKETS POOL

##### OBJECTIVES

The objective of the Private Markets Pool is to enhance the diversification and stability of the portfolio, while generating a higher level of income than generally available in the public fixed income markets and to provide for long-term growth of participants' assets and risk-reduction through diversification. The Private Markets Pool is comprised of the private credit & income, private equity, and real estate strategies. Prior to July 1, 2017, each of these strategies were operated as individual investment pools. For operational efficiencies, the three pools were combined on July 1, 2017 to form the Private Markets Pool. Investment performance for the Private Markets Pool and each of these strategies is presented on the following page.

The private credit & income strategy is comprised of the following categories and target range allocations:

| Category            | Target | Target Range               |
|---------------------|--------|----------------------------|
| Core Private Credit | 55%    | Minimum 45% to Maximum 75% |
| Specialty Credit    | 35%    | Minimum 25% to Maximum 45% |
| Opportunistic       | 10%    | Minimum 0% to Maximum 20%  |

The private equity strategy is comprised of the following categories and target range allocations:

| Category          | Target Range |
|-------------------|--------------|
| Corporate Finance | 90-100%      |
| Venture Capital   | 0-10%        |
| U.S.              | 80-100%      |
| Non-U.S.          | 0-20%        |

The real estate strategy is comprised of the following categories and target range allocations:

| Category      | Target | Target Range         |
|---------------|--------|----------------------|
| Core          | 50%    | +/- 20% (30% to 70%) |
| Value-Added   | 30%    | +/- 20% (10% to 50%) |
| Opportunistic | 20%    | +/- 10% (10% to 30%) |

##### MANAGEMENT STRUCTURE

Franklin Park, StepStone Group, and Verus provide consulting services related to the selection of limited partnerships and funds. The selection of investments are approved by the Private Equity or Real Estate Committees.

##### FINANCIAL HIGHLIGHTS (in \$000s)

Audited financial statements for the Private Markets Pool are available at [www.wvimb.org](http://www.wvimb.org). Financial Highlights are presented below.

##### Condensed Statement of Net Position

|  |                     |
|--|---------------------|
| Investments                              | \$ 6,206,428        |
| Payable upon return of securities loaned | (12,799)            |
| Fund distributions receivable            | 13,694              |
| Other assets and liabilities, net        | 907                 |
| Net position - June 30, 2023             | <u>\$ 6,208,230</u> |

**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

**PRIVATE MARKETS POOL (Continued)**

**FINANCIAL HIGHLIGHTS (in \$000s) (continued)**

| Investments                                | Fair Value          | Percent of Securities |
|--|---------------------|-----------------------|
| Corporate bonds                            | \$ 11,583           | 0.2%                  |
| Equity investments                         | 210,973             | 3.4                   |
| Money market mutual fund                   | 102,222             | 1.6                   |
| Private credit & income funds              | 905,767             | 14.6                  |
| Private equity partnerships                | 2,762,811           | 44.5                  |
| Private real estate partnerships and funds | 2,200,273           | 35.5                  |
| Securities lending collateral              | 12,799              | 0.2                   |
| <b>Total</b>                               | <b>\$ 6,206,428</b> | <b>100.0%</b>         |

**Progression of Net Position**

|                                     |                     |
|-------------------------------------|---------------------|
| Net position - June 30, 2022        | \$ 6,088,775        |
| Net investment income               | 32,722              |
| Net increase from unit transactions | 86,733              |
| <b>Net position - June 30, 2023</b> | <b>\$ 6,208,230</b> |

**INVESTMENT PERFORMANCE**

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of external investment management and/or partnership fees and expenses.

| Period     | Private Credit & Income |                              | Private Equity |                                      |
|------------|-------------------------|------------------------------|----------------|--------------------------------------|
|            | Actual                  | SOFRA plus 400 basis points* | Actual         | Russell 3000 plus 300 basis points** |
| One-year   | 3.5%                    | 10.3%                        | 5.2%           | 22.0%                                |
| Three-year | 7.7%                    | 7.6%                         | 22.0%          | 16.9%                                |
| Five-year  | 6.4%                    | 5.7%                         | 20.8%          | 14.4%                                |
| Ten-year   | N/A                     | N/A                          | 18.6%          | 15.4%                                |

\*Prior to June 2023, the Private Credit & Income index was the Credit Suisse Leveraged Loan plus 200 basis points. Prior to April 2017, it was the Credit Suisse Leveraged Loan plus 250 basis points.

\*\*Prior to January 2014, the Private Equity index was the S&P 500 plus 500 basis points.

| Period     | Real Estate |                              | Private Markets Pool* |
|------------|-------------|------------------------------|-----------------------|
|            | Actual      | NCREIF plus 100 basis points | Actual                |
| One-year   | (5.4)%      | (0.6)%                       | 0.6%                  |
| Three-year | 7.0%        | 8.2%                         | 13.9%                 |
| Five-year  | 5.7%        | 7.7%                         | 12.4%                 |
| Ten-year   | 7.8%        | 9.3%                         | N/A                   |

\*The Private Markets Pool does not have a benchmark.

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

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#### PRIVATE MARKETS POOL (Continued)

#### EXPENSES

The WVIMB charges the pool for its direct investment-related expenses, such as investment advisor fees, custodian bank fees, and certain professional service fees, and an allocated share of other expenses. Expense ratios and trading costs do not reflect the pool's proportionate share of expenses of the underlying investee funds. Commission trading costs were \$137,000 for the year ended June 30, 2023. The Private Market Pool's expenses for the year, divided by the average net position, are as follows:

#### Expense Ratio (in basis points)

|                                  |             |
|----------------------------------|-------------|
| Investment advisor fees          | 2.0         |
| Trustee fees                     | 0.0*        |
| Custodian bank fees              | 0.1         |
| Management fees                  | 2.4         |
| Fiduciary bond fees              | 0.0*        |
| External fees/Fund closing costs | 19.5        |
| Professional service fees        | 3.1         |
| Total                            | <u>27.1</u> |

\* Expense Ratio rounds to less than 0.1 basis points.

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

#### HEDGE FUND POOL

##### OBJECTIVES

The main objective for the Hedge Fund Pool is to reduce risk through diversification of participants' assets. Secondly, the Hedge Fund Pool should provide for long-term growth.

The Hedge Funds are comprised of the following strategic categories and target range allocations:

| Category            | Target Range | Allocation Range |
|---------------------|--------------|------------------|
| <b>Core</b>         |              |                  |
| Relative Value      | 25-35%       | 20-50%           |
| Event Driven        | 20-30%       | 15-35%           |
| Long-Short Equity   | 20-30%       | 15-35%           |
| Directional         | 10-20%       | 5-25%            |
| <b>Supplemental</b> |              |                  |
| Long Biased         | 3-15%        | 0-20%            |
| Private Equity      | 0-3%         | 0-5%             |
| Private Credit      | 0-3%         | 0-5%             |
| Real Assets         | 0-3%         | 0-5%             |

##### MANAGEMENT STRUCTURE

Albourne America has been retained by the WVIMB to provide consulting services for this investment strategy. The selection of investments are approved by the Hedge Fund Committee.

##### FINANCIAL HIGHLIGHTS (in \$000s)

Audited financial statements for the Hedge Fund Pool are available at [www.wvimb.org](http://www.wvimb.org). Financial Highlights are presented below.

##### Condensed Statement of Net Position

|                                   |                     |
|-----------------------------------|---------------------|
| Investments                       | \$ 2,477,593        |
| Investment funds redeemed         | 3,512               |
| Other assets and liabilities, net | (22)                |
| Net position - June 30, 2023      | <u>\$ 2,481,083</u> |

##### Investments

|                          | Fair Value          | Percent of Securities |
|--------------------------|---------------------|-----------------------|
| Hedge funds              | \$ 2,471,798        | 99.8%                 |
| Money market mutual fund | 5,795               | 0.2                   |
| Total                    | <u>\$ 2,477,593</u> | <u>100.0%</u>         |

##### Progression of Net Position

|                                     |                     |
|-------------------------------------|---------------------|
| Net position - June 30, 2022        | \$ 2,296,411        |
| Net investment income               | 122,921             |
| Net increase from unit transactions | 61,751              |
| Net position - June 30, 2023        | <u>\$ 2,481,083</u> |

**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

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**HEDGE FUND POOL (Continued)**

**INVESTMENT PERFORMANCE**

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of external investment management and/or partnership fees and expenses.

| Period     | Actual | HFRI FOF plus 100 basis points* |
|------------|--------|---------------------------------|
| One-year   | 5.2%   | 4.6%                            |
| Three-year | 8.2%   | 6.0%                            |
| Five-year  | 5.4%   | 4.3%                            |
| Ten-year   | 4.9%   | 4.0%                            |

\* Prior to January 2014, the Hedge Fund index was LIBOR plus 400 basis points.

**EXPENSES**

The WVIMB charges the pool for its direct investment-related expenses, such as custodian bank fees and certain professional service fees, and an allocated share of other expenses. Expense ratios do not reflect the pool's proportionate share of expenses of the underlying investee funds. The Hedge Fund Pool's expenses for the year, divided by the average net position, are as follows:

| <b>Expense Ratio (in basis points)</b> |            |
|--|------------|
| Trustee fees                           | 0.0*       |
| Custodian bank fees                    | 0.0*       |
| Management fees                        | 2.4        |
| Fiduciary bond fees                    | 0.0*       |
| Professional service fees              | 2.5        |
| <b>Total</b>                           | <b>4.9</b> |

\* Expense Ratio rounds to less than 0.1 basis points.



**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

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**PUBLIC EMPLOYEES’ RETIREMENT SYSTEM**

**HISTORY**

The Public Employees’ Retirement System (PERS) was created in 1961.

**LIQUIDITY NEEDS**

PERS is expected to have modest liquidity needs of approximately 1 to 2 percent per year for the foreseeable future.

**INVESTMENT OBJECTIVES**

The investment objectives are as follows:

- Exceed the actuarial interest rate assumption of 7.25 percent per annum, net of fees.
- Reduce the unfunded liability while maintaining adequate liquidity to satisfy benefit payments and not subjecting PERS to an undue level of risk.

**ASSET ALLOCATION**

Based upon a determination of the appropriate risk tolerance, the Board adopted the following broad asset allocation guidelines for the assets managed for PERS. Base and Strategic Allocations are established on a market value basis. The Allocation Committee has the authority to change the allocation within an established range around the Strategic Allocation for the public equity and fixed income asset classes. The range authority for public equities and fixed income is defined in the WVIMB’s Investment Policy Statement for the Equity and Fixed Income Pools, respectively Appendix C. The domestic large capitalization allocation to Equity will be implemented through the use of the Portable Alpha Pool described in Appendix C. WVIMB Staff, in consultation with the appropriate representative(s) from PERS will from time to time set a target for transactional cash needs. The Board will receive a report on the target level annually.

| Asset Class                       | Base Allocation | Strategic Allocation |
|-----------------------------------|-----------------|----------------------|
| Equity (including Portable Alpha) | 60.0%           | 45.0%                |
| Fixed Income                      | 40.0%           | 15.0%                |
| Private Markets                   |                 |                      |
| Private Credit and Income         | 0.0%            | 6.0%                 |
| Private Equity                    | 0.0%            | 12.0%                |
| Real Estate                       | 0.0%            | 12.0%                |
| Hedge Funds                       | 0.0%            | 10.0%                |

**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

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**PUBLIC EMPLOYEES' RETIREMENT SYSTEM (Continued)**

**FINANCIAL HIGHLIGHTS (in \$000s)**

**Progression of Plan Balance**

|                   |              |
|-------------------|--------------|
| June 30, 2022     | \$ 8,004,835 |
| Contributions     | 99,230       |
| Withdrawals       | (374,844)    |
| Net               | (275,614)    |
| Investment income | 672          |
| Net appreciation  | 668,541      |
| June 30, 2023     | \$ 8,398,434 |

**Asset Allocation**

|                               | Amount       | Percent of Total |
|-------------------------------|--------------|------------------|
| Portable Alpha                | \$ 2,063,608 | 24.6%            |
| Non-Large Cap Domestic Equity | 381,971      | 4.5              |
| International Qualified       | 537,494      | 6.4              |
| International Equity          | 1,010,684    | 12.0             |
| Short-Term Fixed Income       | 9,213        | 0.1              |
| Total Return Fixed Income     | 619,106      | 7.4              |
| Core Fixed Income             | 582,903      | 6.9              |
| Private Markets               | 2,348,329    | 28.0             |
| Hedge Fund                    | 845,126      | 10.1             |
| Total                         | \$ 8,398,434 | 100.0%           |

**INVESTMENT PERFORMANCE**

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of fees.

| Period      | Actual | Target |
|-------------|--------|--------|
| One-year    | 8.6%   | 7.25%  |
| Three-year  | 10.3%  | 7.25%  |
| Five-year   | 8.0%   | 7.25%  |
| Ten-year    | 8.6%   | 7.25%  |
| Twenty-year | 8.1%   | 7.25%  |

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

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## TEACHERS' RETIREMENT SYSTEM

### HISTORY

The Teachers' Retirement System (TRS) was created in 1941. It was closed to new members in 1991, but reopened to first-time hires as of July 1, 2005. Employees hired from 1991 through June 30, 2005, joined the Teachers' Defined Contribution Plan (TDC). In the spring of 2008, more than 78 percent of the participants in the Teachers' Defined Contribution Plan elected to transfer their TDC account balance to TRS and become participants in TRS. This transfer occurred in July 2008.

### LIQUIDITY NEEDS

TRS has a net negative cash flow position and will likely continue to have substantial liquidity needs of at least 10 percent per year.

### INVESTMENT OBJECTIVES

The investment objectives are as follows:

- Exceed the actuarial interest rate assumption of 7.25 percent per annum, net of fees.
- Reduce the unfunded liability while maintaining adequate liquidity to satisfy benefit payments and not subjecting TRS to an undue level of risk.

### ASSET ALLOCATION

Based upon a determination of the appropriate risk tolerance, the Board adopted the following broad asset allocation guidelines for the assets managed for TRS. Base and Strategic Allocations are established on a market value basis. The Allocation Committee has the authority to change the allocation within an established range around the Strategic Allocation for the public equity and fixed income asset classes. The range authority for public equities and fixed income is defined in the WVIMB's Investment Policy Statement for the Equity and Fixed Income Pools, respectively Appendix C. The domestic large capitalization allocation to Equity will be implemented through the use of the Portable Alpha Pool described in Appendix C. WVIMB Staff, in consultation with the appropriate representative(s) from TRS will from time to time set a target for transactional cash needs. The Board will receive a report on the target level annually.

| Asset Class                       | Base Allocation | Strategic Allocation |
|-----------------------------------|-----------------|----------------------|
| Equity (including Portable Alpha) | 60.0%           | 45.0%                |
| Fixed Income                      | 40.0%           | 15.0%                |
| Private Markets                   |                 |                      |
| Private Credit and Income         | 0.0%            | 6.0%                 |
| Private Equity                    | 0.0%            | 12.0%                |
| Real Estate                       | 0.0%            | 12.0%                |
| Hedge Funds                       | 0.0%            | 10.0%                |

**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

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**TEACHERS' RETIREMENT SYSTEM (Continued)**

**FINANCIAL HIGHLIGHTS (in \$000s)**

**Progression of Plan Balance**

|                   |                     |
|-------------------|---------------------|
| June 30, 2022     | \$ 8,980,424        |
| Contributions     | 214,600             |
| Withdrawals       | <u>(615,205)</u>    |
| Net               | (400,605)           |
| Investment income | 1,165               |
| Net appreciation  | 738,719             |
| June 30, 2023     | <u>\$ 9,319,703</u> |

**Asset Allocation**

|                               | Amount              | Percent of Total |
|-------------------------------|---------------------|------------------|
| Portable Alpha                | \$ 2,272,242        | 24.4%            |
| Non-Large Cap Domestic Equity | 422,941             | 4.5              |
| International Qualified       | 593,354             | 6.4              |
| International Equity          | 1,116,899           | 12.0             |
| Short-Term Fixed Income       | 71,694              | 0.8              |
| Total Return Fixed Income     | 679,332             | 7.3              |
| Core Fixed Income             | 638,250             | 6.8              |
| Private Markets               | 2,592,053           | 27.8             |
| Hedge Fund                    | 932,938             | 10.0             |
| Total                         | <u>\$ 9,319,703</u> | <u>100.0%</u>    |

**INVESTMENT PERFORMANCE**

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of fees.

| Period      | Actual | Target |
|-------------|--------|--------|
| One-year    | 8.5%   | 7.25%  |
| Three-year  | 10.3%  | 7.25%  |
| Five-year   | 8.0%   | 7.25%  |
| Ten-year    | 8.6%   | 7.25%  |
| Twenty-year | 7.9%   | 7.25%  |

**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

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**STATE POLICE DEATH, DISABILITY AND RETIREMENT FUND**

**HISTORY**

The State Police Death, Disability and Retirement Fund (SPDDRF) was created in 1925.

**LIQUIDITY NEEDS**

SPDDRF is now a closed plan and is expected to experience an increasingly negative cash flow position in the near future.

**INVESTMENT OBJECTIVES**

The investment objectives are as follows:

- Exceed the actuarial interest rate assumption of 7.25 percent per annum, net of fees.
- Reduce the unfunded liability while maintaining adequate liquidity to satisfy benefit payments and not subjecting SPDDRF to an undue level of risk.

**ASSET ALLOCATION**

Based upon a determination of the appropriate risk tolerance, the Board adopted the following broad asset allocation guidelines for the assets managed for SPDDRF. Base and Strategic Allocations are established on a market value basis. The Allocation Committee has the authority to change the allocation within an established range around the Strategic Allocation for the public equity and fixed income asset classes. The range authority for public equities and fixed income is defined in the WVIMB’s Investment Policy Statement for the Equity and Fixed Income Pools, respectively Appendix C. The domestic large capitalization allocation to Equity will be implemented through the use of the Portable Alpha Pool described in Appendix C. WVIMB Staff, in consultation with the appropriate representative(s) from SPDDRF will from time to time set a target for transactional cash needs. The Board will receive a report on the target level annually.

| Asset Class                       | Base Allocation | Strategic Allocation |
|-----------------------------------|-----------------|----------------------|
| Equity (including Portable Alpha) | 60.0%           | 45.0%                |
| Fixed Income                      | 40.0%           | 15.0%                |
| Private Markets                   |                 |                      |
| Private Credit and Income         | 0.0%            | 6.0%                 |
| Private Equity                    | 0.0%            | 12.0%                |
| Real Estate                       | 0.0%            | 12.0%                |
| Hedge Funds                       | 0.0%            | 10.0%                |

**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

**STATE POLICE DEATH, DISABILITY AND RETIREMENT FUND (Continued)**

**FINANCIAL HIGHLIGHTS (in \$000s)**

**Progression of Plan Balance**

|                   |    |                |
|-------------------|----|----------------|
| June 30, 2022     | \$ | 767,508        |
| Contributions     |    | 251            |
| Withdrawals       |    | (52,270)       |
| Net               |    | (52,019)       |
| Investment income |    | 80             |
| Net appreciation  |    | 62,870         |
| June 30, 2023     | \$ | <u>778,439</u> |

**Asset Allocation**

|                               | Amount     | Percent of Total |
|-------------------------------|------------|------------------|
| Portable Alpha                | \$ 192,747 | 24.7%            |
| Non-Large Cap Domestic Equity | 35,802     | 4.6              |
| International Qualified       | 50,016     | 6.4              |
| International Equity          | 92,655     | 11.9             |
| Short-Term Fixed Income       | 436        | 0.1              |
| Total Return Fixed Income     | 56,513     | 7.3              |
| Core Fixed Income             | 53,092     | 6.8              |
| Private Markets               | 218,529    | 28.1             |
| Hedge Fund                    | 78,649     | 10.1             |
| Total                         | \$ 778,439 | 100.0%           |

**INVESTMENT PERFORMANCE**

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of fees.

| Period      | Actual | Target |
|-------------|--------|--------|
| One-year    | 8.6%   | 7.25%  |
| Three-year  | 10.4%  | 7.25%  |
| Five-year   | 8.0%   | 7.25%  |
| Ten-year    | 8.6%   | 7.25%  |
| Twenty-year | 8.1%   | 7.25%  |

**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

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**STATE POLICE RETIREMENT SYSTEM**

**HISTORY**

The State Police Retirement System (SPRS) was created in 1994.

**LIQUIDITY NEEDS**

SPRS is expected to be in a positive net cash flow position for the foreseeable future.

**INVESTMENT OBJECTIVES**

The investment objectives are as follows:

- Exceed the actuarial interest rate assumption of 7.25 percent per annum, net of fees.
- Reduce the unfunded liability while maintaining adequate liquidity to satisfy benefit payments and not subjecting SPRS to an undue level of risk.

**ASSET ALLOCATION**

Based upon a determination of the appropriate risk tolerance, the Board adopted the following broad asset allocation guidelines for the assets managed for SPRS. Base and Strategic Allocations are established on a market value basis. The Allocation Committee has the authority to change the allocation within an established range around the Strategic Allocation for the public equity and fixed income asset classes. The range authority for public equities and fixed income is defined in the WVIMB’s Investment Policy Statement for the Equity and Fixed Income Pools, respectively Appendix C. The domestic large capitalization allocation to Equity will be implemented through the use of the Portable Alpha Pool described in Appendix C. WVIMB Staff, in consultation with the appropriate representative(s) from SPRS will from time to time set a target for transactional cash needs. The Board will receive a report on the target level annually.

| Asset Class                       | Base Allocation | Strategic Allocation |
|-----------------------------------|-----------------|----------------------|
| Equity (including Portable Alpha) | 60.0%           | 45.0%                |
| Fixed Income                      | 40.0%           | 15.0%                |
| Private Markets                   |                 |                      |
| Private Credit and Income         | 0.0%            | 6.0%                 |
| Private Equity                    | 0.0%            | 12.0%                |
| Real Estate                       | 0.0%            | 12.0%                |
| Hedge Funds                       | 0.0%            | 10.0%                |

**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

**STATE POLICE RETIREMENT SYSTEM (Continued)**

**FINANCIAL HIGHLIGHTS (in \$000s)**

**Progression of Plan Balance**

|                   |                          |
|-------------------|--------------------------|
| June 30, 2022     | \$ 289,417               |
| Contributions     | 6,820                    |
| Withdrawals       | <u>(1,075)</u>           |
| Net               | 5,745                    |
| Investment income | 20                       |
| Net appreciation  | 24,912                   |
| June 30, 2023     | <u><u>\$ 320,094</u></u> |

**Asset Allocation**

|                               | Amount                   | Percent of<br>Total  |
|-------------------------------|--------------------------|----------------------|
| Portable Alpha                | \$ 78,430                | 24.4%                |
| Non-Large Cap Domestic Equity | 14,294                   | 4.5                  |
| International Qualified       | 20,357                   | 6.4                  |
| International Equity          | 37,984                   | 11.9                 |
| Short-Term Fixed Income       | 1,204                    | 0.4                  |
| Total Return Fixed Income     | 23,792                   | 7.4                  |
| Core Fixed Income             | 23,125                   | 7.2                  |
| Private Markets               | 88,903                   | 27.8                 |
| Hedge Fund                    | 32,005                   | 10.0                 |
| Total                         | <u><u>\$ 320,094</u></u> | <u><u>100.0%</u></u> |

**INVESTMENT PERFORMANCE**

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of fees.

| Period      | Actual | Target |
|-------------|--------|--------|
| One-year    | 8.5%   | 7.25%  |
| Three-year  | 10.3%  | 7.25%  |
| Five-year   | 8.0%   | 7.25%  |
| Ten-year    | 8.6%   | 7.25%  |
| Twenty-year | 8.1%   | 7.25%  |



**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

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**DEPUTY SHERIFFS’ RETIREMENT SYSTEM**

**HISTORY**

The Deputy Sheriff’s Retirement System (DSRS) was created in 1998.

**LIQUIDITY NEEDS**

DSRS currently has positive net cash flows.

**INVESTMENT OBJECTIVES**

The investment objectives are as follows:

- Exceed the actuarial interest rate assumption of 7.25 percent per annum, net of fees.
- Preserve the current well-funded position while not subjecting DSRS to an undue level of risk.

**ASSET ALLOCATION**

Based upon a determination of the appropriate risk tolerance, the Board adopted the following broad asset allocation guidelines for the assets managed for DSRS. Base and Strategic Allocations are established on a market value basis. The Allocation Committee has the authority to change the allocation within an established range around the Strategic Allocation for the public equity and fixed income asset classes. The range authority for public equities and fixed income is defined in the WVIMB’s Investment Policy Statement for the Equity and Fixed Income Pools, respectively Appendix C. The domestic large capitalization allocation to Equity will be implemented through the use of the Portable Alpha Pool described in Appendix C. WVIMB Staff, in consultation with the appropriate representative(s) from DSRS will from time to time set a target for transactional cash needs. The Board will receive a report on the target level annually.

| Asset Class                       | Base Allocation | Strategic Allocation |
|-----------------------------------|-----------------|----------------------|
| Equity (including Portable Alpha) | 60.0%           | 45.0%                |
| Fixed Income                      | 40.0%           | 15.0%                |
| Private Markets                   |                 |                      |
| Private Credit and Income         | 0.0%            | 6.0%                 |
| Private Equity                    | 0.0%            | 12.0%                |
| Real Estate                       | 0.0%            | 12.0%                |
| Hedge Funds                       | 0.0%            | 10.0%                |

**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

**DEPUTY SHERIFFS' RETIREMENT SYSTEM (Continued)**

**FINANCIAL HIGHLIGHTS (in \$000s)**

**Progression of Plan Balance**

|                   |    |         |
|-------------------|----|---------|
| June 30, 2022     | \$ | 293,315 |
| Contributions     |    | 4,675   |
| Withdrawals       |    | (6,866) |
| Net               |    | (2,191) |
| Investment income |    | 20      |
| Net appreciation  |    | 24,895  |
| June 30, 2023     | \$ | 316,039 |

**Asset Allocation**

|                               | Amount     | Percent of Total |
|-------------------------------|------------|------------------|
| Portable Alpha                | \$ 77,535  | 24.6%            |
| Non-Large Cap Domestic Equity | 14,251     | 4.5              |
| International Qualified       | 20,179     | 6.4              |
| International Equity          | 37,765     | 11.9             |
| Short-Term Fixed Income       | 539        | 0.2              |
| Total Return Fixed Income     | 23,401     | 7.4              |
| Core Fixed Income             | 22,507     | 7.1              |
| Private Markets               | 88,136     | 27.9             |
| Hedge Fund                    | 31,726     | 10.0             |
| Total                         | \$ 316,039 | 100.0%           |

**INVESTMENT PERFORMANCE**

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of fees.

| Period      | Actual | Target |
|-------------|--------|--------|
| One-year    | 8.5%   | 7.25%  |
| Three-year  | 10.3%  | 7.25%  |
| Five-year   | 8.0%   | 7.25%  |
| Ten-year    | 8.6%   | 7.25%  |
| Twenty-year | 8.1%   | 7.25%  |

**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

**JUDGES’ RETIREMENT SYSYTEM**

**HISTORY**

The Judges’ Retirement System (JRS) was created in 1949.

**LIQUIDITY NEEDS**

JRS currently has slightly negative net cash flows.

**INVESTMENT OBJECTIVES**

The investment objectives are as follows:

- Exceed the actuarial interest rate assumption of 7.25 percent per annum, net of fees.
- Reduce the unfunded liability while maintaining adequate liquidity to satisfy benefit payments but not subjecting JRS to an undue level of risk.

**ASSET ALLOCATION**

Based upon a determination of the appropriate risk tolerance, the Board adopted the following broad asset allocation guidelines for the assets managed for JRS. Base and Strategic Allocations are established on a market value basis. The Allocation Committee has the authority to change the allocation within an established range around the Strategic Allocation for the public equity and fixed income asset classes. The range authority for public equities and fixed income is defined in the WVIMB’s Investment Policy Statement for the Equity and Fixed Income Pools, respectively Appendix C. The domestic large capitalization allocation to Equity will be implemented through the use of the Portable Alpha Pool described in Appendix C. WVIMB Staff, in consultation with the appropriate representative(s) from JRS will from time to time set a target for transactional cash needs. The Board will receive a report on the target level annually.

| Asset Class                       | Base Allocation | Strategic Allocation |
|-----------------------------------|-----------------|----------------------|
| Equity (including Portable Alpha) | 60.0%           | 45.0%                |
| Fixed Income                      | 40.0%           | 15.0%                |
| Private Markets                   |                 |                      |
| Private Credit and Income         | 0.0%            | 6.0%                 |
| Private Equity                    | 0.0%            | 12.0%                |
| Real Estate                       | 0.0%            | 12.0%                |
| Hedge Funds                       | 0.0%            | 10.0%                |

**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
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**JUDGES' RETIREMENT SYSTEM (Continued)**

**FINANCIAL HIGHLIGHTS (in \$000s)**

**Progression of Plan Balance**

|                   |    |         |
|-------------------|----|---------|
| June 30, 2022     | \$ | 259,323 |
| Contributions     |    | 1,250   |
| Withdrawals       |    | (4,060) |
| Net               |    | (2,810) |
| Investment income |    | 16      |
| Net appreciation  |    | 22,016  |
| June 30, 2023     | \$ | 278,545 |

**Asset Allocation**

|                               | Amount     | Percent of Total |
|-------------------------------|------------|------------------|
| Portable Alpha                | \$ 68,412  | 24.6%            |
| Non-Large Cap Domestic Equity | 12,590     | 4.5              |
| International Qualified       | 17,801     | 6.4              |
| International Equity          | 33,290     | 12.0             |
| Short-Term Fixed Income       | 369        | 0.1              |
| Total Return Fixed Income     | 20,594     | 7.4              |
| Core Fixed Income             | 19,752     | 7.1              |
| Private Markets               | 77,750     | 27.9             |
| Hedge Fund                    | 27,987     | 10.0             |
| Total                         | \$ 278,545 | 100.0%           |

**INVESTMENT PERFORMANCE**

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of fees.

| Period      | Actual | Target |
|-------------|--------|--------|
| One-year    | 8.5%   | 7.25%  |
| Three-year  | 10.3%  | 7.25%  |
| Five-year   | 8.0%   | 7.25%  |
| Ten-year    | 8.6%   | 7.25%  |
| Twenty-year | 8.1%   | 7.25%  |

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

## EMERGENCY MEDICAL SERVICES RETIREMENT SYSTEM

### HISTORY

The Emergency Medical Services Retirement System (EMSRS) was created by the *Emergency Medical Services Retirement System Act* effective January 1, 2008, under *West Virginia Code §16-5V-4*. EMSRS members with benefits earned in the Public Employees' Retirement System (PERS) transferred their full membership and benefits under PERS to EMSRS on the effective date.

### LIQUIDITY NEEDS

EMSRS is expected to be in a positive net cash flow position for the foreseeable future.

### INVESTMENT OBJECTIVES

The investment objectives are as follows:

- Exceed the actuarial interest rate assumption of 7.25 percent per annum, net of fees.
- Maintain adequate liquidity to satisfy benefit payments and not subject EMSRS to an undue level of risk.

### ASSET ALLOCATION

Based upon a determination of the appropriate risk tolerance, the Board adopted the following broad asset allocation guidelines for the assets managed for EMSRS. Base and Strategic Allocations are established on a market value basis. The Allocation Committee has the authority to change the allocation within an established range around the Strategic Allocation for the public equity and fixed income asset classes. The range authority for public equities and fixed income is defined in the WVIMB's Investment Policy Statement for the Equity and Fixed Income Pools, respectively Appendix C. The domestic large capitalization allocation to Equity will be implemented through the use of the Portable Alpha Pool described in Appendix C. WVIMB Staff, in consultation with the appropriate representative(s) from EMSRS will from time to time set a target for transactional cash needs. The Board will receive a report on the target level annually.

| Asset Class                       | Base Allocation | Strategic Allocation |
|-----------------------------------|-----------------|----------------------|
| Equity (including Portable Alpha) | 60.0%           | 45.0%                |
| Fixed Income                      | 40.0%           | 15.0%                |
| Private Markets                   |                 |                      |
| Private Credit and Income         | 0.0%            | 6.0%                 |
| Private Equity                    | 0.0%            | 12.0%                |
| Real Estate                       | 0.0%            | 12.0%                |
| Hedge Funds                       | 0.0%            | 10.0%                |

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

#### EMERGENCY MEDICAL SERVICES RETIREMENT SYSTEM (Continued)

##### FINANCIAL HIGHLIGHTS (in \$000s)

###### Progression of Plan Balance

|                   |    |         |
|-------------------|----|---------|
| June 30, 2022     | \$ | 112,407 |
| Contributions     |    | 4,260   |
| Withdrawals       |    | (1,107) |
| Net               |    | 3,153   |
| Investment income |    | 15      |
| Net appreciation  |    | 9,605   |
| June 30, 2023     | \$ | 125,180 |

###### Asset Allocation

|                               | Amount     | Percent of Total |
|-------------------------------|------------|------------------|
| Portable Alpha                | \$ 30,062  | 23.9%            |
| Non-Large Cap Domestic Equity | 5,510      | 4.4              |
| International Qualified       | 7,826      | 6.3              |
| International Equity          | 14,622     | 11.7             |
| Short-Term Fixed Income       | 2,764      | 2.2              |
| Total Return Fixed Income     | 9,079      | 7.3              |
| Core Fixed Income             | 8,829      | 7.1              |
| Private Markets               | 34,182     | 27.3             |
| Hedge Fund                    | 12,306     | 9.8              |
| Total                         | \$ 125,180 | 100.0%           |

##### INVESTMENT PERFORMANCE

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of fees.

| Period     | Actual | Target |
|------------|--------|--------|
| One-year   | 8.5%   | 7.25%  |
| Three-year | 10.3%  | 7.25%  |
| Five-year  | 8.0%   | 7.25%  |
| Ten-year   | 8.6%   | 7.25%  |

# West Virginia Consolidated Public Retirement Board

## Investment Section

### Investment Pool Objectives, Financial Highlights, and Performance

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## MUNICIPAL POLICE OFFICERS' AND FIREFIGHTERS' RETIREMENT SYSTEM

### HISTORY

Municipal Police Officers' and Firefighters' Retirement System (MPFRS) was created in 2010.

### LIQUIDITY NEEDS

There are no anticipated liquidity needs at this time.

### INVESTMENT OBJECTIVES

The investment objectives are as follows:

- Exceed the actuarial interest rate assumption of 7.25 percent per annum, net of fees.
- Maintain adequate liquidity to satisfy benefit payments and not subject MPFRS to an undue level of risk.

### ASSET ALLOCATION

Based upon a determination of the appropriate risk tolerance, the Board adopted the following broad asset allocation guidelines for the assets managed for MPFRS. Base and Strategic Allocations are established on a market value basis. The Allocation Committee has the authority to change the allocation within an established range around the Strategic Allocation for the public equity and fixed income asset classes. The range authority for public equities and fixed income is defined in the WVIMB's Investment Policy Statement for the Equity and Fixed Income Pools, respectively Appendix C. The domestic large capitalization allocation to Equity will be implemented through the use of the Portable Alpha Pool described in Appendix C. WVIMB Staff, in consultation with the appropriate representative(s) from MPFRS will from time to time set a target for transactional cash needs. The Board will receive a report on the target level annually.

| Asset Class                       | Base Allocation | Strategic Allocation |
|-----------------------------------|-----------------|----------------------|
| Equity (including Portable Alpha) | 60.0%           | 45.0%                |
| Fixed Income                      | 40.0%           | 15.0%                |
| Private Markets                   |                 |                      |
| Private Credit and Income         | 0.0%            | 6.0%                 |
| Private Equity                    | 0.0%            | 12.0%                |
| Real Estate                       | 0.0%            | 12.0%                |
| Hedge Funds                       | 0.0%            | 10.0%                |

**West Virginia Consolidated Public Retirement Board**  
*Investment Section*  
*Investment Pool Objectives, Financial Highlights, and Performance*

**MUNICIPAL POLICE OFFICERS' AND FIREFIGHTERS' RETIREMENT SYSTEM (Continued)**

**FINANCIAL HIGHLIGHTS (in \$000s)**

**Progression of Plan Balance**

|                   |    |        |
|-------------------|----|--------|
| June 30, 2022     | \$ | 26,796 |
| Contributions     |    | 5,625  |
| Withdrawals       |    | (10)   |
| Net               |    | 5,615  |
| Investment income |    | 14     |
| Net appreciation  |    | 2,520  |
| June 30, 2023     | \$ | 34,945 |

**Asset Allocation**

|                               | Amount    | Percent of Total |
|-------------------------------|-----------|------------------|
| Portable Alpha                | \$ 8,364  | 23.9%            |
| Non-Large Cap Domestic Equity | 1,492     | 4.3              |
| International Qualified       | 2,136     | 6.1              |
| International Equity          | 3,945     | 11.3             |
| Short-Term Fixed Income       | 1,394     | 4.0              |
| Total Return Fixed Income     | 2,481     | 7.1              |
| Core Fixed Income             | 2,451     | 7.0              |
| Private Markets               | 9,325     | 26.7             |
| Hedge Fund                    | 3,357     | 9.6              |
| Total                         | \$ 34,945 | 100.0%           |

**INVESTMENT PERFORMANCE**

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of fees.

| Period     | Actual | Target |
|------------|--------|--------|
| One-year   | 8.4%   | 7.25%  |
| Three-year | 10.1%  | 7.25%  |
| Five-year  | 7.9%   | 7.25%  |
| Ten-year   | 8.4%   | 7.25%  |



# NATURAL RESOURCES POLICE OFFICERS' RETIREMENT SYSTEM

## HISTORY

The Natural Resources Police Officers' Retirement System (NRPORS) was created under the Natural Resources Police Officers' Retirement System Act effective January 2, 2021, under West Virginia Code §20-18-4. NRPORS members with benefits earned in the Public Employees' Retirement System (PERS) transferred their full membership and benefits under PERS to NRPORS on the effective date January 2, 2021.

## LIQUIDITY NEEDS

NRPORS is expected to be in a positive net cash flow position through fiscal year 2024.

## INVESTMENT OBJECTIVES

The investment objectives are as follows:

- Exceed the actuarial interest rate assumption of 7.25 percent per annum, net of fees.
- Maintain adequate liquidity to satisfy benefit payments and not subject NRPORS to an undue level of risk.

## ASSET ALLOCATION

Based upon a determination of the appropriate risk tolerance, the Board adopted the following broad asset allocation guidelines for the assets managed for NRPORS. Base and Strategic Allocations are established on a market value basis. The Allocation Committee has the authority to change the allocation within an established range around the Strategic Allocation for the public equity and fixed income asset classes. The range authority for public equities and fixed income is defined in the WVIMB's Investment Policy Statement for the Equity and Fixed Income Pools, respectively Appendix C. The domestic large capitalization allocation to Equity will be implemented through the use of the Portable Alpha Pool described in Appendix C. WVIMB Staff, in consultation with the appropriate representative(s) from NRPORS will from time to time set a target for transactional cash needs. The Board will receive a report on the target level annually.

| Asset Class                       | Base Allocation | Strategic Allocation |
|-----------------------------------|-----------------|----------------------|
| Equity (including Portable Alpha) | 60.0%           | 45.0%                |
| Fixed Income                      | 40.0%           | 15.0%                |
| Private Markets                   |                 |                      |
| Private Credit and Income         | 0.0%            | 6.0%                 |
| Private Equity                    | 0.0%            | 12.0%                |
| Real Estate                       | 0.0%            | 12.0%                |
| Hedge Funds                       | 0.0%            | 10.0%                |

## NATURAL RESOURCES POLICE OFFICERS' RETIREMENT SYSTEM (Continued)

### FINANCIAL HIGHLIGHTS (in \$000s)

#### Progression of Plan Balance

|                   |    |        |
|-------------------|----|--------|
| June 30, 2022     | \$ | 24,467 |
| Contributions     |    | 1,163  |
| Withdrawals       |    | (115)  |
| Net               |    | 1,048  |
| Investment income |    | 5      |
| Net appreciation  |    | 2,123  |
| June 30, 2023     | \$ | 27,643 |

#### Asset Allocation

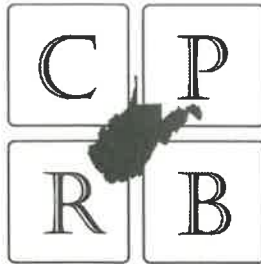
|                               | Amount    | Percent of<br>Total |
|-------------------------------|-----------|---------------------|
| Portable Alpha                | \$ 6,753  | 24.4%               |
| Non-Large Cap Domestic Equity | 1,223     | 4.4                 |
| International Qualified       | 1,745     | 6.3                 |
| International Equity          | 3,251     | 11.8                |
| Short-Term Fixed Income       | 326       | 1.2                 |
| Total Return Fixed Income     | 2,017     | 7.3                 |
| Core Fixed Income             | 1,960     | 7.1                 |
| Private Markets               | 7,624     | 27.6                |
| Hedge Fund                    | 2,744     | 9.9                 |
| Total                         | \$ 27,643 | 100.0%              |

### INVESTMENT PERFORMANCE

The WVIMB calculates total rates of return using the time-weighted rate of return methodology. The time-weighted method determines the rate of return exclusive of the effects of participant contributions or withdrawals. Actual rates of return are net of fees.

| Period   | Actual | Target |
|----------|--------|--------|
| One-year | 8.5%   | 7.25%  |

# Actuarial Section



2023 ANNUAL COMPREHENSIVE FINANCIAL REPORT  
*For the Fiscal Year Ended June 30, 2023*

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**OVERVIEW**

The Actuarial Section of the annual comprehensive financial report provides information related to the actuarial valuations prepared for each of the pension plans for funding purposes. Other schedules provide information regarding the required contributions, benefits, and funded status of the plans.

Effective with the adoption of GASB 67 for the fiscal year ended June 30, 2014, each of the pension plans has an actuarial valuation prepared for funding purposes and a separate actuarial valuation prepared for financial reporting purposes. The actuarial valuations included in this section of the annual comprehensive financial report have been prepared for funding purposes and have been prepared as of July 1, 2022, the beginning of the plan year. The actuarial valuations prepared for financial reporting purposes have been prepared as of June 30, 2023, the end of the plan year, and were the source of much of the actuarial information in the Financial Section.

The actuarial methods and assumptions used to prepare the actuarial valuations for funding purposes and for financial reporting purposes are nearly identical. The primary difference is in the asset valuation method for the Public Employees Retirement System (PERS), the Teachers' Retirement System (TRS), the Deputy Sheriff Retirement System (DSRS), and the Natural Resources Police Officers Retirement System (NRPORS). For financial reporting purposes, the fair value of the PERS, TRS, DSRS, and NRPORS assets as of the end of the fiscal year is used. For funding purposes, a four-year smoothing of the actuarial gain or loss on PERS, TRS, DSRS, and NRPORS asset returns each year is used.





110 W. Berry Street  
Suite 1300  
Fort Wayne, IN 46802

December 18, 2023

West Virginia Consolidated Public Retirement Board  
West Virginia Public Employees' Retirement System  
601 57th Street SE, Suite 5  
Charleston, WV 25304

Dear Board Members,

We performed the annual actuarial valuation of the West Virginia Public Employees' Retirement System (PERS) as of July 1, 2022. The purpose of the actuarial valuation is to determine the actuarial liabilities of the System for funding purposes and to determine whether expected contributions will be sufficient to fulfill the System's long-term funding policy.

The valuation was based on membership data as of June 30, 2022, maintained by the West Virginia Consolidated Public Retirement Board, and financial information received from the West Virginia Investment Management Board. Buck reviewed the data for reasonableness and consistency with data provided for prior valuations but did not audit the data. The accuracy of the results of the valuation is dependent on the accuracy of the data.

The tables presented for PERS in the actuarial section of this Annual Comprehensive Financial Report are based on information contained in our July 1, 2022, valuation report dated March 31, 2023. These tables include:

#### Actuarial Section

- Summary of Actuarial Methods and Assumptions
- Schedule of Active Member Valuation Data
- Schedule of Funding Progress
- Solvency Test
- Schedule of Retirees and Beneficiaries Added and Removed
- Changes in Unfunded Actuarial Liability

#### Financial Section

- Schedules of Contributions

All schedules in the Actuarial Section above were completed by the West Virginia Consolidated Public Retirement Board. Buck has reviewed these schedules for accuracy and consistency with the information provided in our July 1, 2022, valuation report.

The report presents fairly the actuarial position of PERS as of July 1, 2022, in accordance with Actuarial Standards of Practice (ASOP) applied on a basis consistent with that of the preceding valuation. In our opinion, the assumptions used in preparing the liabilities and costs are individually reasonable with respect to PERS experience and represent our best estimate of anticipated future experience of PERS. The assumptions were developed in accordance with the guidance set forth in applicable Actuarial Standards of Practice, including ASOPs 27 and 35. The mortality assumptions were developed in accordance with the recommendation that an appropriate margin for future improvement in mortality beyond the measurement date be included.

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

Where presented, the “funded ratio” and “unfunded accrued liability” are typically measured using the actuarial value of assets. Use of the market value of assets instead would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but does not represent the funded status of the plan if the plan were to settle (i.e., purchase annuities to cover) a portion or all of its liabilities.

Actuarial Standard of Practice No. 56 (ASOP 56) provides guidance to actuaries performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. Buck uses the following:

- third-party software to calculate the liabilities associated with the provisions of the plan using data, assumptions, and funding methods as specified in our report, and
- an internally developed model that applies applicable funding methods and policies to the liabilities derived from the output of the third-party software and other inputs, such as plan assets and contributions, to generate the exhibits found in our report.

Buck has an extensive review process in which the results of the liability calculations are checked using detailed sample life output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other funding outputs and the internal model are similarly reviewed in detail and at a higher level for accuracy, reasonability, and consistency with prior results. Buck also reviews the third-party model when significant changes are made to the software. This review is performed by experts within Buck who are familiar with applicable funding methods, as well as the manner in which the model generates its output. If significant changes are made to the internal model, extra checking and review are completed.

The results presented herewith were prepared solely for the Consolidated Public Retirement Board for the purposes herein stated and may not be appropriate to use for other purposes. Buck does not intend to benefit and assumes no duty or liability to other parties who receive this work. Use of this report for any other purposes or by anyone other than the Consolidated Public Retirement Board and its auditors may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. No one may make any representations or warranties based on any statements or conclusions contained in this report without Buck’s prior written consent.




We are Fellows of the Society of Actuaries and Members of the American Academy of Actuaries. We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about it.

Buck Global, LLC (Buck)



David L. Driscoll, FSA, EA, MAAA, FCA  
Principal, Consulting Actuary



Elizabeth A. Wiley, FSA, EA, MAAA, FCA  
Senior Consultant, Retirement Actuary



**SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS**

**Valuation Date:** July 1, 2022

**Funding Method and Basis for Assumptions**

The valuation is prepared under the Entry Age Normal Cost Method with individually computed accrued liabilities. The Normal Cost is computed in aggregate. Entry is based on date of hire.

Experience studies are performed at least once in every 5-year period. This valuation was prepared on the basis of assumptions that were recommended to and adopted by the Board based on the experience study covering the period from July 1, 2013, to June 30, 2018. These assumptions will remain in effect for valuation purposes until such time as the Board adopts revised demographic assumptions.

The valuation reflects economic assumptions, which include a rate of investment return of 7.25% per annum, as adopted by the Board, and assumed future salary increases, which were based on the findings presented in the July 1, 2015 – June 30, 2020, Experience Study. These assumptions will remain in effect for valuation purposes until the Board adopts revised economic assumptions.

**Interest Rate and Expenses**

The valuation interest assumption is 7.25% per annum, with no loading for system expenses.

**Salary Scales**

Salary scales are used for the assumed increase in salary. The Valuation results reflect the \$2,550 annual pay increase effective July 1, 2022 for all active members of PERS. This flat-dollar increase was used in the valuation in place of the assumed salary scales for FY 2023. Projected salary increases for State employees range from 2.75% to 5.55% per year and Nonstate employees range from 3.60% to 6.75% per year. Assumed increases in salary for sample ages are as follows:

| Salary Scales |       |          |
|---------------|-------|----------|
| Age           | State | Nonstate |
| 30            | 5.05% | 4.85%    |
| 40            | 4.55% | 4.35%    |
| 50            | 4.20% | 4.10%    |
| 60            | 3.35% | 3.60%    |

**Mortality**

The mortality tables are as follows:

- Pre-retirement males: 100% of Pub-2010 General Employee male table, below-median, headcount-weighted, projected generationally with scale MP-2018
- Pre-retirement females: 100% of Pub-2010 General Employee female table, below-median, headcount-weighted, projected generationally with scale MP-2018
- Post-retirement healthy males: 108% of Pub-2010 General Retiree male table, below-median, headcount-weighted, projected generationally with scale MP-2018
- Post-retirement healthy females: 122% of Pub-2010 General Retiree female table, below-median, headcount-weighted, projected generationally with scale MP-2018
- Disabled males: 118% of Pub-2010 General/Teachers Disabled male table, headcount-weighted, projected generationally with scale MP-2018
- Disabled females: 117% of Pub-2010 General/Teachers Disabled female table, headcount-weighted, projected generationally with scale MP-2018
- Beneficiary males: \* 112% of Pub-2010 Contingent Survivor male table, below-median, headcount-weighted, projected generationally with scale MP-2018
- Beneficiary females: \* 115% of Pub-2010 Contingent Survivor female table, below-median, headcount-weighted, projected generationally with scale MP-2018

\* The credibility-weighted Pub-2010 Contingent Survivor mortality tables are also applied to spouses and designated beneficiaries while the member is alive.

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
***Public Employees Retirement System***

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**Withdrawal from Service**

Specific tables have been created to reflect withdrawal rates. All withdrawals are assumed to result in refund of contributions if non-vested or a deferred annuity if vested. The liability for a refund of contributions for nonactive non-vested members as of the valuation date is assumed to be 60% of the total employee contribution balance of such members. Sample withdrawal rates are as follows:

| State (less than 1 year) |         |         | State (1 to 2 years) |         |         |
|--------------------------|---------|---------|----------------------|---------|---------|
| Age                      | Male    | Female  | Age                  | Male    | Female  |
| 30                       | 0.35068 | 0.29227 | 30                   | 0.27720 | 0.24200 |
| 40                       | 0.27209 | 0.23023 | 40                   | 0.20160 | 0.18000 |
| 50                       | 0.21294 | 0.19734 | 50                   | 0.16706 | 0.15000 |
| 60                       | 0.19520 | 0.16445 | 60                   | 0.15188 | 0.13500 |

| State (2 to 3 years) |         |         | State (3 to 4 years) |         |         |
|----------------------|---------|---------|----------------------|---------|---------|
| Age                  | Male    | Female  | Age                  | Male    | Female  |
| 30                   | 0.20930 | 0.20016 | 30                   | 0.17160 | 0.18144 |
| 40                   | 0.14950 | 0.16046 | 40                   | 0.11440 | 0.12600 |
| 50                   | 0.11000 | 0.13750 | 50                   | 0.08580 | 0.10584 |
| 60                   | 0.08250 | 0.10313 | 60                   | 0.05720 | 0.07560 |

| State (4 to 5 years) |         |         | State (greater than 5 years) |         |         |
|----------------------|---------|---------|------------------------------|---------|---------|
| Age                  | Male    | Female  | Age                          | Male    | Female  |
| 30                   | 0.13230 | 0.14625 | 30                           | 0.10080 | 0.11000 |
| 40                   | 0.10500 | 0.11375 | 40                           | 0.06000 | 0.05850 |
| 50                   | 0.07700 | 0.08626 | 50                           | 0.03900 | 0.04550 |
| 60                   | 0.04025 | 0.06000 | 60                           | 0.03000 | 0.02275 |

| Nonstate (less than 1 year) |         |         | Nonstate (1 to 2 years) |         |         |
|-----------------------------|---------|---------|-------------------------|---------|---------|
| Age                         | Male    | Female  | Age                     | Male    | Female  |
| 30                          | 0.30360 | 0.27577 | 30                      | 0.24480 | 0.21850 |
| 40                          | 0.24840 | 0.24035 | 40                      | 0.18720 | 0.18975 |
| 50                          | 0.19320 | 0.18975 | 50                      | 0.13200 | 0.13000 |
| 60                          | 0.15180 | 0.15180 | 60                      | 0.12000 | 0.11000 |

| Nonstate (2 to 3 years) |         |         | Nonstate (3 to 4 years) |         |         |
|-------------------------|---------|---------|-------------------------|---------|---------|
| Age                     | Male    | Female  | Age                     | Male    | Female  |
| 30                      | 0.19360 | 0.19542 | 30                      | 0.16940 | 0.15500 |
| 40                      | 0.15180 | 0.13965 | 40                      | 0.11000 | 0.13000 |
| 50                      | 0.10800 | 0.12564 | 50                      | 0.08800 | 0.10000 |
| 60                      | 0.09600 | 0.10379 | 60                      | 0.06600 | 0.08000 |

| Nonstate (4 to 5 years) |         |         | Nonstate (greater than 5 years) |         |         |
|-------------------------|---------|---------|---------------------------------|---------|---------|
| Age                     | Male    | Female  | Age                             | Male    | Female  |
| 30                      | 0.12000 | 0.14820 | 30                              | 0.10247 | 0.09000 |
| 40                      | 0.10800 | 0.10260 | 40                              | 0.06210 | 0.06435 |
| 50                      | 0.07920 | 0.07980 | 50                              | 0.04600 | 0.04200 |
| 60                      | 0.05040 | 0.05700 | 60                              | 0.02500 | 0.02600 |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*Public Employees Retirement System*

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**Disablement Rates**

Sample rates of disablement are as follows:

| State and Nonstate |         |         |
|--------------------|---------|---------|
| Age                | Male    | Female  |
| 30                 | 0.00022 | 0.00039 |
| 40                 | 0.00082 | 0.00073 |
| 50                 | 0.00351 | 0.00225 |
| 60                 | 0.00540 | 0.00488 |

**Retirement Rates**

The retirement rates are as follows:

| State and Nonstate |       |
|--------------------|-------|
| Age                | Rates |
| 55                 | 0.30  |
| 56                 | 0.18  |
| 57                 | 0.15  |
| 58                 | 0.15  |
| 59                 | 0.15  |
| 60                 | 0.12  |
| 61                 | 0.15  |
| 62                 | 0.22  |
| 63                 | 0.15  |
| 64                 | 0.18  |
| 65                 | 0.25  |
| 66                 | 0.20  |
| 67                 | 0.20  |
| 68                 | 0.20  |
| 69                 | 0.20  |
| 70+                | 1.00  |

**Family Composition**

It is assumed that 85% of males and 80% of females are married, with husbands 3 years older than wives. Remarriage rates are not used.

**Accrual of Future Service**

It is assumed that active members will accrue 1 year of service for each future year of employment.

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*Public Employees Retirement System*

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**Noncontributory Service Loadings**

Noncontributory service for active members is estimated from member's contributory service by adjusting the present value of benefits projected from contributory service alone. The assumed service loads are as follows:

| Group             | Tier 1 | Tier 2 |
|-------------------|--------|--------|
| Male - State      | 10.10% | 0.00%  |
| Male - Nonstate   | 8.80%  | 0.00%  |
| Female - State    | 3.20%  | 0.00%  |
| Female - Nonstate | 2.80%  | 0.00%  |

**Asset Valuation Method**

4-year 25% level smoothing of actuarial gain or (loss) on trust fund return:

- Implemented over 4 years, prospectively commencing July 1, 2009 for the experience for the trust year ending June 30, 2009.
- Actuarial gain or (loss) on assets is calculated as the difference between the expected return under valuation assumptions based on the smoothed Actuarial Value of Assets and the actual trust fund return.
- Actuarial gain or (loss) is recognized at 25% of the original amount each year until fully recognized in the fourth year.
- Total accumulated deferred gain or (loss) amounts are used to adjust the reported Market Value of Assets to determine the Actuarial Value of Assets.

**System Contributions**

Both employee and employer contributions to the System are assumed to be paid in the middle of the year.

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
**Public Employees Retirement System**

**Schedule of Active Member Valuation Data**

| Valuation Date | Number | Annual Payroll   | Annual Average Pay | % Change in Average Pay | Number of Employers |
|----------------|--------|------------------|--------------------|-------------------------|---------------------|
| 6/30/2022      | 34,952 | \$ 1,656,685,000 | \$ 47,399          | 4.6%                    | 520                 |
| 6/30/2021      | 35,576 | 1,611,398,000    | 45,295             | 2.8%                    | 517                 |
| 6/30/2020      | 35,781 | 1,577,290,000    | 44,082             | 4.5%                    | 516                 |
| 6/30/2019      | 35,508 | 1,497,636,000    | 42,177             | 5.6%                    | 517                 |
| 6/30/2018      | 34,765 | 1,388,662,000    | 39,944             | 0.8%                    | 519                 |
| 6/30/2017      | 36,094 | 1,430,578,000    | 39,635             | 1.3%                    | 523                 |
| 6/30/2016      | 36,150 | 1,414,585,000    | 39,131             | 1.5%                    | 513                 |
| 6/30/2015      | 36,122 | 1,392,113,000    | 38,539             | 1.0%                    | 512                 |
| 6/30/2014      | 36,413 | 1,389,089,000    | 38,148             | 0.6%                    | 513                 |
| 6/30/2013      | 36,637 | 1,389,850,000    | 37,936             | 0.3%                    | 511                 |

**Schedule of Funding Progress (in thousands)**

| Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) Entry Age (b) | Unfunded AAL (UAAL) (b-a) | Funded Ratio (a/b) | Covered Payroll (c) | UAAL as a % of Covered Payroll ((b-a)/c) |
|----------------|-------------------------------|---|---------------------------|--------------------|---------------------|--|
| 7/1/2022       | \$ 8,084,685                  | \$ 8,179,835                                    | \$ 95,150                 | 98.8%              | \$ 1,656,685        | 5.7%                                     |
| 7/1/2021       | 7,745,853                     | 7,942,242                                       | 196,389                   | 97.5%              | 1,611,398           | 12.2%                                    |
| 7/1/2020       | 7,129,022                     | 7,506,535                                       | 377,513                   | 95.0%              | 1,577,290           | 23.9%                                    |
| 7/1/2019       | 6,792,291                     | 7,237,396                                       | 445,105                   | 93.9%              | 1,497,636           | 29.7%                                    |
| 7/1/2018       | 6,508,771                     | 7,003,602                                       | 494,831                   | 92.9%              | 1,388,662           | 35.6%                                    |
| 7/1/2017       | 6,248,413                     | 6,832,513                                       | 584,100                   | 91.5%              | 1,430,578           | 40.8%                                    |
| 7/1/2016       | 5,888,558                     | 6,615,406                                       | 726,848                   | 89.0%              | 1,414,585           | 51.4%                                    |
| 7/1/2015       | 5,565,081                     | 6,412,587                                       | 847,506                   | 86.8%              | 1,392,113           | 60.9%                                    |
| 7/1/2014       | 5,208,828                     | 6,271,827                                       | 1,062,999                 | 83.1%              | 1,389,089           | 76.5%                                    |
| 7/1/2013       | 4,709,530                     | 5,911,263                                       | 1,201,733                 | 79.7%              | 1,389,850           | 86.5%                                    |

**Solvency Test (in thousands)**

| Valuation Date | (1)<br>Active Member Contributions | (2)<br>Terms, Retirees, and Beneficiaries | (3)<br>Active Members (Employer Financed Portion) | Valuation of Assets | % of Accrued Liabilities Covered by Valuation Assets |        |       |
|----------------|------------------------------------|---|---|---------------------|--|--------|-------|
|                |                                    |   |   |                     | (1)  | (2)    | (3)   |
| 6/30/2022      | \$ 835,994                         | \$ 4,818,381                              | \$ 2,525,460                                      | \$ 8,084,685        | 100.0%   | 100.0% | 96.2% |
| 6/30/2021      | 827,629                            | 4,632,247                                 | 2,482,366   | 7,745,853           | 100.0%   | 100.0% | 92.1% |
| 6/30/2020      | 810,953                            | 4,381,135                                 | 2,314,447   | 7,129,022           | 100.0%   | 100.0% | 83.7% |
| 6/30/2019      | 781,469                            | 4,250,094                                 | 2,205,833   | 6,792,291           | 100.0%   | 100.0% | 79.8% |
| 6/30/2018      | 761,779                            | 4,141,930                                 | 2,099,893   | 6,508,771           | 100.0%   | 100.0% | 76.4% |
| 6/30/2017      | 782,548                            | 4,003,286                                 | 2,046,679   | 6,248,413           | 100.0%   | 100.0% | 71.5% |
| 6/30/2016      | 777,734                            | 3,806,345                                 | 2,031,327   | 5,888,558           | 100.0%   | 100.0% | 64.2% |
| 6/30/2015      | 763,823                            | 3,636,257                                 | 2,012,507   | 5,565,081           | 100.0%   | 100.0% | 57.9% |
| 6/30/2014      | 759,854                            | 3,299,873                                 | 2,212,100   | 5,208,828           | 100.0%   | 100.0% | 51.9% |
| 6/30/2013      | 744,416                            | 3,137,477                                 | 2,029,370   | 4,709,530           | 100.0%   | 100.0% | 40.8% |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*Public Employees Retirement System*

**Schedule of Retirees and Beneficiaries Added and Removed**

| Fiscal Year<br>Ended | Added  |                      | Removed |                      | Year End |                      | % Increase in<br>Annual<br>Allowances | Average<br>Annual<br>Allowances |
|----------------------|--------|----------------------|---------|----------------------|----------|----------------------|---------------------------------------|---------------------------------|
|                      | Number | Annual<br>Allowances | Number  | Annual<br>Allowances | Number   | Annual<br>Allowances |                                       |                                 |
| 2022                 | 1,857  | \$ 21,711,657        | (1,461) | \$ 1,545,820         | 29,405   | \$ 489,325,853       | 4.3%                                  | \$ 16,641                       |
| 2021                 | 1,839  | 28,717,613           | (1,280) | 12,558,810           | 29,009   | 469,160,016          | 3.6%                                  | 16,173                          |
| 2020                 | 1,533  | 17,437,818           | (1,116) | 1,401,904            | 28,450   | 453,001,213          | 3.7%                                  | 15,923                          |
| 2019                 | 1,587  | 15,953,248           | (1,122) | 923,665              | 28,033   | 436,965,299          | 3.6%                                  | 15,588                          |
| 2018                 | 1,307  | 24,156,218           | (792)   | 4,433,612            | 27,568   | 421,935,716          | 4.9%                                  | 15,305                          |
| 2017                 | 1,758  | 24,722,798           | (998)   | 5,086,662            | 27,053   | 402,213,110          | 5.1%                                  | 14,868                          |
| 2016                 | 1,687  | 21,059,900           | (1,073) | 11,122,718           | 26,293   | 382,576,974          | 2.7%                                  | 14,551                          |
| 2015                 | 1,806  | 34,274,051           | (1,058) | 12,142,200           | 25,679   | 372,639,792          | 6.0%                                  | 14,511                          |
| 2014                 | 1,664  | 31,294,049           | (938)   | 9,203,018            | 24,931   | 351,455,484          | 5.6%                                  | 14,097                          |
| 2013                 | 1,725  | 31,593,996           | (980)   | 9,613,212            | 24,205   | 332,761,008          | 6.6%                                  | 13,748                          |

**Changes in Unfunded Actuarial Liability**

|  |                      |
|--|----------------------|
| Unfunded Actuarial Liability, June 30, 2021        | \$ 196,389,000       |
| Interest   | 16,507,000           |
| Normal cost  | 153,579,000          |
| Contributions                                      | (248,926,000)        |
| Assumption changes                                 | -                    |
| Liability (Gain)/Loss                              | 17,670,000           |
| Actuarial Asset (Gain)/Loss                        | (40,069,000)         |
| <b>Unfunded Actuarial Liability, June 30, 2022</b> | <b>\$ 95,150,000</b> |

**Schedule of Contributions**

The Schedule of Contributions is included in the Required Supplementary Information provided in the Financial Section of this Annual Comprehensive Financial Report.

**Plan Provisions**

A discussion of plan provisions is included in Note 2 to the financial statements included in the Financial Section.





110 W. Berry Street  
Suite 1300  
Fort Wayne, IN 46802

December 18, 2023

West Virginia Consolidated Public Retirement Board  
West Virginia Teachers' Retirement System  
601 57th Street SE, Suite 5  
Charleston, WV 25304

Dear Board Members,

We performed the annual actuarial valuation of the West Virginia Teachers' Retirement System (TRS) as of July 1, 2022. The purpose of the actuarial valuation is to determine the actuarial liabilities of the System for funding purposes and to determine whether expected contributions will be sufficient to fulfill the System's long-term funding policy.

The valuation was based on membership data as of June 30, 2022, maintained by the West Virginia Consolidated Public Retirement Board, and financial information received from the West Virginia Investment Management Board. Buck reviewed the data for reasonableness and consistency with data provided for prior valuations but did not audit the data. The accuracy of the results of the valuation is dependent on the accuracy of the data.

The tables presented for TRS in the actuarial section of this Annual Comprehensive Financial Report are based on information contained in our July 1, 2022, valuation report dated March 31, 2023. These tables include:

#### Actuarial Section

- Summary of Actuarial Methods and Assumptions
- Schedule of Active Member Valuation Data
- Schedule of Funding Progress
- Solvency Test
- Schedule of Retirees and Beneficiaries Added and Removed
- Changes in Unfunded Actuarial Liability

#### Financial Section

- Schedules of Contributions

All schedules in the Actuarial Section above were completed by the West Virginia Consolidated Public Retirement Board. Buck has reviewed these schedules for accuracy and consistency with the information provided in our July 1, 2022, valuation report.

The report presents fairly the actuarial position of TRS as of July 1, 2022, in accordance with Actuarial Standards of Practice (ASOP) applied on a basis consistent with that of the preceding valuation. In our opinion, the assumptions used in preparing the liabilities and costs are individually reasonable with respect to TRS experience and represent our best estimate of anticipated future experience of TRS. The assumptions were developed in accordance with the guidance set forth in applicable Actuarial Standards of Practice, including ASOPs 27 and 35. The mortality assumptions were developed in accordance with the recommendation that an appropriate margin for future improvement in mortality beyond the measurement date be included.

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

Where presented, the “funded ratio” and “unfunded accrued liability” are typically measured using the actuarial value of assets. Use of the market value of assets instead would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but does not represent the funded status of the plan if the plan were to settle (i.e., purchase annuities to cover) a portion or all of its liabilities.

Actuarial Standard of Practice No. 56 (ASOP 56) provides guidance to actuaries performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. Buck uses the following:

- third-party software to calculate the liabilities associated with the provisions of the plan using data, assumptions, and funding methods as specified in our report, and
- an internally developed model that applies applicable funding methods and policies to the liabilities derived from the output of the third-party software and other inputs, such as plan assets and contributions, to generate the exhibits found in our report.

Buck has an extensive review process in which the results of the liability calculations are checked using detailed sample life output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other funding outputs and the internal model are similarly reviewed in detail and at a higher level for accuracy, reasonability, and consistency with prior results. Buck also reviews the third-party model when significant changes are made to the software. This review is performed by experts within Buck who are familiar with applicable funding methods, as well as the manner in which the model generates its output. If significant changes are made to the internal model, extra checking and review are completed.

The results presented herewith were prepared solely for the Consolidated Public Retirement Board for the purposes herein stated and may not be appropriate to use for other purposes. Buck does not intend to benefit and assumes no duty or liability to other parties who receive this work. Use of this report for any other purposes or by anyone other than the Consolidated Public Retirement Board and its auditors may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. No one may make any representations or warranties based on any statements or conclusions contained in this report without Buck’s prior written consent.

We are Fellows of the Society of Actuaries and Members of the American Academy of Actuaries. We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about it.

Buck Global, LLC (Buck)



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David L. Driscoll, FSA, EA, MAAA, FCA  
Principal, Consulting Actuary



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Elizabeth A. Wiley, FSA, EA, MAAA, FCA  
Senior Consultant, Retirement Actuary



West Virginia Consolidated Public Retirement Board  
 Actuarial Section  
Teachers' Retirement System  
 SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Valuation Date: July 1, 2022

**Funding Method and Basis for Assumptions**

The valuation is prepared under the Entry Age Cost Method with individually computed accrued liabilities. The Normal Cost is computed in aggregate. Entry is based on adjusted date of hire (i.e. valuation date minus known past service).

Experience studies are performed at least once in every five-year period. The valuation was prepared using demographic assumptions that were recommended to and adopted by the Board based on the experience study covering the period from July 1, 2014, to June 30, 2019. The valuation reflects economic assumptions, which include a rate of investment return of 7.25% per annum, as adopted by the Board, and assumed future salary increases, which were based on the findings presented in the July 1, 2015, to June 30, 2020 Experience Study. These assumptions will remain in effect for valuation purposes until the Board adopts revised assumptions.

**Interest Rate and Expenses**

The valuation interest assumption is 7.25% per annum, with no loading for plan expenses.

**Salary Scales**

Projected salary increases are in the following ranges by group, with an underlying inflation rate of 2.75%:

| Group        | Range of Projected Salary Increases |
|--------------|-------------------------------------|
| Teachers     | 2.75% - 5.90%                       |
| Non-Teachers | 2.75% - 6.50%                       |

A sample of salaries from the salary scales is as follows:

| Age | Teachers | Non-Teachers and State |
|-----|----------|------------------------|
| 30  | 5.468%   | 5.580%                 |
| 40  | 4.613%   | 4.844%                 |
| 50  | 3.760%   | 4.110%                 |
| 60  | 3.213%   | 3.373%                 |

The valuation results reflect the pay increase of \$1,464 per year for Service Personnel and \$2,240 per year for teachers. This flat-dollar increase was used in the valuation in the place of the assumed salary scales for FY 2023.

**Pre-Retirement Mortality**

Pub-2010 General Employee table, headcount-weighted, projected generationally with scale MP-2019.

**Post-Retirement Mortality**

The mortality tables used are as follows:

- Retired Males: 100% of Pub-2010 General Retiree male table, headcount-weighted, projected generationally with scale MP-2019
- Retired Females: 112% of Pub-2010 General Retiree female table, headcount-weighted, projected generationally with scale MP-2019
- Disabled Males: 107% of Pub-2010 General/Teachers Disabled male table, headcount-weighted, projected generationally with scale MP-2019
- Disabled Females: 113% of Pub-2010 General/Teachers Disabled female table, headcount-weighted, projected generationally with scale MP-2019
- Beneficiary Males:\* 101% of Pub-2010 Contingent Survivor male table, headcount-weighted, projected generationally with scale MP-2019
- Beneficiary Females:\* 113% of Pub-2010 Contingent Survivor female table, headcount-weighted, projected generationally with scale MP-2019

\* The credibility-weighted Pub-2010 Contingent Survivor mortality tables are also applied to spouses and designated beneficiaries while the member is alive

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
***Teachers' Retirement System***

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**Withdrawal from Service**

Withdrawal rates are assumed to cease upon eligibility for retirement. All withdrawal is assumed to result in refund of contributions if non-vested or a deferred annuity if vested. Sample withdrawal rates are as follows:

| Teachers (less than 1 year) |         |         |
|-----------------------------|---------|---------|
| Age                         | Male    | Female  |
| 30                          | 0.19571 | 0.19571 |
| 40                          | 0.25286 | 0.24172 |
| 50                          | 0.31000 | 0.27900 |
| 60                          | 0.35000 | 0.35000 |

| Teachers (1 to 2 years) |         |         |
|-------------------------|---------|---------|
| Age                     | Male    | Female  |
| 30                      | 0.15574 | 0.11000 |
| 40                      | 0.14250 | 0.11000 |
| 50                      | 0.12926 | 0.11000 |
| 60                      | 0.12000 | 0.11000 |

| Teachers (2 to 3 years) |         |         |
|-------------------------|---------|---------|
| Age                     | Male    | Female  |
| 30                      | 0.10275 | 0.10360 |
| 40                      | 0.09750 | 0.07560 |
| 50                      | 0.09750 | 0.07000 |
| 60                      | 0.09750 | 0.07000 |

| Teachers (3 to 4 years) |         |         |
|-------------------------|---------|---------|
| Age                     | Male    | Female  |
| 30                      | 0.07200 | 0.07186 |
| 40                      | 0.05592 | 0.07000 |
| 50                      | 0.04500 | 0.07000 |
| 60                      | 0.04500 | 0.07000 |

| Teachers (4 to 5 years) |         |         |
|-------------------------|---------|---------|
| Age                     | Male    | Female  |
| 30                      | 0.07888 | 0.08100 |
| 40                      | 0.06448 | 0.05102 |
| 50                      | 0.05008 | 0.04050 |
| 60                      | 0.04000 | 0.04050 |

| Teachers (greater than 5 years) |         |         |
|---------------------------------|---------|---------|
| Age                             | Male    | Female  |
| 30                              | 0.04200 | 0.04800 |
| 40                              | 0.03332 | 0.03200 |
| 50                              | 0.02100 | 0.01600 |
| 60                              | 0.02800 | 0.02400 |

| Non-Teachers and State (less than 1 year) |         |         |
|---|---------|---------|
| Age                                       | Male    | Female  |
| 30  | 0.15600 | 0.20378 |
| 40  | 0.13200 | 0.17243 |
| 50  | 0.10800 | 0.14108 |
| 60  | 0.08400 | 0.10973 |

| Non-Teachers and State (1 to 2 years) |         |         |
|---------------------------------------|---------|---------|
| Age                                   | Male    | Female  |
| 30                                    | 0.12650 | 0.12560 |
| 40                                    | 0.09200 | 0.08568 |
| 50                                    | 0.06900 | 0.06480 |
| 60                                    | 0.05750 | 0.05850 |

| Non-Teachers and State (2 to 3 years) |         |         |
|---------------------------------------|---------|---------|
| Age                                   | Male    | Female  |
| 30                                    | 0.12500 | 0.09520 |
| 40                                    | 0.09360 | 0.06160 |
| 50                                    | 0.06000 | 0.05242 |
| 60                                    | 0.06000 | 0.05600 |

| Non-Teachers and State (3 to 4 years) |         |         |
|---------------------------------------|---------|---------|
| Age                                   | Male    | Female  |
| 30                                    | 0.08000 | 0.10000 |
| 40                                    | 0.07000 | 0.05400 |
| 50                                    | 0.07000 | 0.05265 |
| 60                                    | 0.07000 | 0.06075 |

| Non-Teachers and State (4 to 5 years) |         |         |
|---------------------------------------|---------|---------|
| Age                                   | Male    | Female  |
| 30                                    | 0.05625 | 0.08438 |
| 40                                    | 0.05175 | 0.05063 |
| 50                                    | 0.05175 | 0.03375 |
| 60                                    | 0.05175 | 0.02532 |

| Non-Teachers and State (greater than 5 years) |         |         |
|---|---------|---------|
| Age   | Male    | Female  |
| 30  | 0.05349 | 0.04728 |
| 40  | 0.03899 | 0.03063 |
| 50  | 0.02785 | 0.02303 |
| 60  | 0.02475 | 0.02450 |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*Teachers' Retirement System*

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**Disablement Rates**

A sample of disablement rates follows:

| Age | Male    | Female  |
|-----|---------|---------|
| 30  | 0.00040 | 0.00051 |
| 40  | 0.00132 | 0.00128 |
| 50  | 0.00305 | 0.00241 |
| 60  | 0.00560 | 0.00563 |

**Retirement Rates**

A schedule of retirement rates follows:

| Age | Teachers |        | Non-Teachers & State |        |
|-----|----------|--------|----------------------|--------|
|     | Male     | Female | Male                 | Female |
| 54  | 0.000    | 0.000  | 0.000                | 0.000  |
| 55  | 0.175    | 0.175  | 0.200                | 0.150  |
| 56  | 0.175    | 0.175  | 0.200                | 0.175  |
| 57  | 0.200    | 0.200  | 0.175                | 0.150  |
| 58  | 0.200    | 0.200  | 0.200                | 0.150  |
| 59  | 0.200    | 0.225  | 0.150                | 0.175  |
| 60  | 0.200    | 0.225  | 0.125                | 0.150  |
| 61  | 0.225    | 0.225  | 0.125                | 0.150  |
| 62  | 0.325    | 0.275  | 0.300                | 0.225  |
| 63  | 0.225    | 0.250  | 0.225                | 0.175  |
| 64  | 0.250    | 0.225  | 0.150                | 0.175  |
| 65  | 0.325    | 0.300  | 0.300                | 0.275  |
| 66  | 0.275    | 0.350  | 0.225                | 0.275  |
| 67  | 0.225    | 0.300  | 0.225                | 0.225  |
| 68  | 0.250    | 0.300  | 0.225                | 0.225  |
| 69  | 0.250    | 0.300  | 0.225                | 0.225  |
| 70+ | 1.000    | 1.000  | 1.000                | 1.000  |

**Accrual of Future Service**

It is assumed that all active members will accrue 1 year of service for each future year of employment.

**Non-Contributory Service Loadings**

The load factor assumptions for non-contributory service (military, parochial or out-of-state teaching, transferred PERS service, and unused sick leave) are as follows:

| Group        | Male   |        | Female |        |
|--------------|--------|--------|--------|--------|
|              | Tier 1 | Tier 2 | Tier 1 | Tier 2 |
| Teachers     | 7.50%  | 0.00%  | 4.60%  | 0.00%  |
| Non-Teachers | 6.00%  | 0.00%  | 4.00%  | 0.00%  |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
***Teachers' Retirement System***

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**Family Composition**

It is assumed that 85% of males and 80% of females are married, with husbands 3 years older than wives. Remarriage rates are not used.

**Asset Valuation Method**

Four-year 25% level smoothing of actuarial gain or (loss) on trust fund return:

- Implemented over 4 years, prospectively commencing July 1, 2016 for the experience for the trust year ending June 30, 2016.
- Actuarial gain or (loss) on assets is calculated as the difference between the expected return under valuation assumptions based on the smoothed Actuarial Value of Assets and the actual trust fund return.
- Actuarial gain or (loss) is recognized at 25% of the original amount each year until fully recognized in the fourth year.
- Total accumulated deferred gain or (loss) amounts are used to adjust the reported Market Value of Assets to determine the Actuarial Value of Assets.

**Plan Contribution**

Both employee and employer contributions to the plan are assumed to be paid in the middle of the year.



West Virginia Consolidated Public Retirement Board  
 Actuarial Section  
 Teachers' Retirement System

Schedule of Active Member Valuation Data

| Valuation Date | Number | Annual Payroll   | Annual Average Pay | % Change in Average Pay | Number of Employers |
|----------------|--------|------------------|--------------------|-------------------------|---------------------|
| 6/30/2022      | 34,871 | \$ 1,686,598,000 | \$ 48,367          | 3.8%                    | 81                  |
| 6/30/2021      | 35,113 | 1,636,411,000    | 46,604             | 0.8%                    | 82                  |
| 6/30/2020      | 34,753 | 1,606,568,000    | 46,228             | 4.5%                    | 80                  |
| 6/30/2019      | 34,108 | 1,508,177,000    | 44,218             | 4.4%                    | 82                  |
| 6/30/2018      | 33,174 | 1,404,586,000    | 42,340             | -0.3%                   | 79                  |
| 6/30/2017      | 34,318 | 1,457,143,000    | 42,460             | 1.0%                    | 80                  |
| 6/30/2016      | 35,811 | 1,505,080,000    | 42,028             | -0.5%                   | 84                  |
| 6/30/2015      | 35,788 | 1,511,271,000    | 42,228             | 1.8%                    | 84                  |
| 6/30/2014      | 35,724 | 1,481,786,000    | 41,479             | -1.1%                   | 84                  |
| 6/30/2013      | 35,593 | 1,493,515,000    | 41,961             | -0.5%                   | 84                  |

Schedule of Funding Progress (in thousands)

| Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) |              | Unfunded AAL (UAAL) (b-a) | Funded Ratio (a/b) | Covered Payroll (c) | UAAL as a % of Covered Payroll ((b-a)/c) |
|----------------|-------------------------------|-----------------------------------|--------------|---------------------------|--------------------|---------------------|--|
|                |                               | Entry Age (b)                     |              |                           |                    |                     |  |
| 7/1/2022       | \$ 9,091,948                  | \$ 11,592,440                     | \$ 2,500,492 | 78.4%                     | \$ 1,686,598       | 148.3%              |  |
| 7/1/2021       | 8,740,204                     | 11,495,184                        | 2,754,980    | 76.0%                     | 1,636,411          | 168.4%              |  |
| 7/1/2020       | 8,116,332                     | 11,154,850                        | 3,038,518    | 72.8%                     | 1,606,568          | 189.1%              |  |
| 7/1/2019       | 7,788,482                     | 10,951,502                        | 3,163,020    | 71.1%                     | 1,508,177          | 209.7%              |  |
| 7/1/2018       | 7,497,885                     | 10,778,022                        | 3,280,137    | 69.6%                     | 1,404,586          | 233.5%              |  |
| 7/1/2017       | 7,193,080                     | 10,727,223                        | 3,534,143    | 67.1%                     | 1,457,143          | 242.5%              |  |
| 7/1/2016       | 6,936,281                     | 10,604,279                        | 3,667,998    | 65.4%                     | 1,505,080          | 243.7%              |  |
| 7/1/2015       | 6,803,089                     | 10,310,652                        | 3,507,563    | 66.0%                     | 1,511,271          | 232.1%              |  |
| 7/1/2014       | 6,682,093                     | 10,098,693                        | 3,416,600    | 66.2%                     | 1,481,786          | 230.6%              |  |
| 7/1/2013       | 5,751,101                     | 9,930,335                         | 4,179,234    | 57.9%                     | 1,493,515          | 279.8%              |  |

Solvency Test (in thousands)

| Valuation Date | (1)<br>Active Member Contributions | (2)<br>Terms, Retirees, and Beneficiaries | (3)<br>Active Members (Employer Financed Portion) | Valuation of Assets | % of Accrued Liabilities Covered by Valuation Assets |       |      |
|----------------|------------------------------------|---|---|---------------------|--|-------|------|
|                |                                    |   |   |                     | (1)  | (2)   | (3)  |
| 6/30/2022      | \$ 1,203,686                       | \$ 8,209,597                              | \$ 2,179,157                                      | \$ 9,091,948        | 100.0%   | 96.0% | 0.0% |
| 6/30/2021      | 1,188,606                          | 8,177,589                                 | 2,128,989   | 8,740,204           | 100.0%   | 92.4% | 0.0% |
| 6/30/2020      | 1,155,649                          | 7,909,421                                 | 2,089,780   | 8,116,332           | 100.0%   | 88.0% | 0.0% |
| 6/30/2019      | 1,113,929                          | 7,854,163                                 | 1,983,410   | 7,788,482           | 100.0%   | 85.0% | 0.0% |
| 6/30/2018      | 1,116,650                          | 7,784,459                                 | 1,876,913   | 7,497,885           | 100.0%   | 82.0% | 0.0% |
| 6/30/2017      | 1,067,691                          | 7,637,691                                 | 2,021,841   | 7,193,080           | 100.0%   | 80.2% | 0.0% |
| 6/30/2016      | 1,394,615                          | 7,333,565                                 | 1,876,099   | 6,936,281           | 100.0%   | 75.6% | 0.0% |
| 6/30/2015      | 1,433,224                          | 6,976,345                                 | 1,901,083   | 6,803,089           | 100.0%   | 77.0% | 0.0% |
| 6/30/2014      | 1,477,848                          | 6,651,706                                 | 1,969,139   | 6,682,093           | 100.0%   | 78.2% | 0.0% |
| 6/30/2013      | 1,533,929                          | 6,264,695                                 | 2,131,711   | 5,751,101           | 100.0%   | 67.3% | 0.0% |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
**Teachers' Retirement System**

**Schedule of Retirees and Beneficiaries Added and Removed**

| Fiscal Year<br>Ended | Added  |                      | Removed |                      | Year End |                      | % Increase in<br>Annual<br>Allowances | Average<br>Annual<br>Allowances |
|----------------------|--------|----------------------|---------|----------------------|----------|----------------------|---------------------------------------|---------------------------------|
|                      | Number | Annual<br>Allowances | Number  | Annual<br>Allowances | Number   | Annual<br>Allowances |                                       |                                 |
| 2022                 | 1,511  | \$ 29,756,823        | (1,696) | \$ 15,122,839        | 37,097   | \$ 877,764,841       | 1.7%                                  | \$ 23,661                       |
| 2021                 | 1,851  | 25,989,474           | (1,366) | 7,129,368            | 37,282   | 863,130,857          | 2.2%                                  | \$ 23,151                       |
| 2020                 | 1,305  | 38,789,550           | (1,160) | 22,058,029           | 36,797   | 844,270,751          | 2.0%                                  | 22,944                          |
| 2019                 | 1,477  | 31,808,469           | (1,219) | 10,779,503           | 36,652   | 827,539,230          | 2.6%                                  | 22,578                          |
| 2018                 | 1,595  | 37,062,473           | (1,165) | 10,582,068           | 36,394   | 806,510,264          | 3.4%                                  | 22,161                          |
| 2017                 | 1,734  | 71,924,160           | (1,210) | 41,033,757           | 35,964   | 780,029,859          | 4.1%                                  | 21,689                          |
| 2016                 | 1,796  | 38,461,963           | (1,094) | 32,304,726           | 35,440   | 749,139,456          | 0.8%                                  | 21,138                          |
| 2015                 | 1,942  | 55,067,119           | (1,204) | 17,480,491           | 34,738   | 742,982,219          | 5.4%                                  | 21,388                          |
| 2014                 | 2,054  | 59,887,492           | (1,061) | 13,218,744           | 34,000   | 704,665,714          | 6.6%                                  | 20,725                          |
| 2013                 | 2,210  | 65,333,080           | (1,116) | 14,090,125           | 33,007   | 661,061,157          | 8.0%                                  | 20,028                          |

**Changes in Unfunded Actuarial Liability**

|  |                     |
|--|---------------------|
| Funded in Excess of Actuarial Liability, June 30, 2021 | \$ 2,754,980        |
| Interest   | 191,062             |
| Normal cost  | 164,655             |
| Contributions  | (578,699)           |
| Assumption changes                                     | -                   |
| Liability (Gain)/Loss                                  | 9,693               |
| Actuarial Asset (Gain)/Loss                            | (41,199)            |
| <b>Unfunded Actuarial Liability, June 30, 2022</b>     | <b>\$ 2,500,492</b> |

**Schedule of Contributions**

The Schedule of Contributions is included in the Required Supplementary Information provided in the Financial Section of this Annual Comprehensive Financial Report.

**Plan Provisions**

A discussion of plan provisions is included in Note 2 to the financial statements included in the Financial Section.



110 W. Berry Street  
Suite 1300  
Fort Wayne, IN 46802

December 18, 2023

West Virginia Consolidated Public Retirement Board  
West Virginia Department of Public Safety Death, Disability and Retirement Fund  
601 57th Street SE, Suite 5  
Charleston, WV 25304

Dear Board Members,

We performed the annual actuarial valuation of the West Virginia Department of Public Safety Death, Disability and Retirement Fund (Plan A) as of July 1, 2022. The purpose of the actuarial valuation is to determine the actuarial liabilities of the System for funding purposes and to determine whether expected contributions will be sufficient to fulfill the System's long-term funding policy.

The valuation was based on membership data as of June 30, 2022, maintained by the West Virginia Consolidated Public Retirement Board, and financial information received from the West Virginia Investment Management Board. Buck reviewed the data for reasonableness and consistency with data provided for prior valuations but did not audit the data. The accuracy of the results of the valuation is dependent on the accuracy of the data.

The tables presented for Plan A in the actuarial section of this Annual Comprehensive Financial Report are based on information contained in our July 1, 2022, valuation report dated March 31, 2023. These tables include:

#### Actuarial Section

- Summary of Actuarial Methods and Assumptions
- Schedule of Active Member Valuation Data
- Schedule of Funding Progress
- Solvency Test
- Schedule of Retirees and Beneficiaries Added and Removed
- Changes in Unfunded Actuarial Liability

#### Financial Section

- Schedules of Contributions

All schedules in the Actuarial Section above were completed by the West Virginia Consolidated Public Retirement Board. Buck has reviewed these schedules for accuracy and consistency with the information provided in our July 1, 2022, valuation report.

The report presents fairly the actuarial position of Plan A as of July 1, 2022, in accordance with Actuarial Standards of Practice (ASOP) applied on a basis consistent with that of the preceding valuation. In our opinion, the assumptions used in preparing the liabilities and costs are individually reasonable with respect to Plan A experience and represent our best estimate of anticipated future experience of Plan A. The assumptions were developed in accordance with the guidance set forth in applicable Actuarial Standards of Practice, including ASOPs 27 and 35. The mortality assumptions were developed in accordance with the recommendation that an appropriate margin for future improvement in mortality beyond the measurement date be included.

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

Where presented, the “funded ratio” and “unfunded accrued liability” are typically measured using the actuarial value of assets. Use of the market value of assets instead would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but does not represent the funded status of the plan if the plan were to settle (i.e., purchase annuities to cover) a portion or all of its liabilities.

Actuarial Standard of Practice No. 56 (ASOP 56) provides guidance to actuaries performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. Buck uses the following:

- third-party software to calculate the liabilities associated with the provisions of the plan using data, assumptions, and funding methods as specified in our report, and
- an internally developed model that applies applicable funding methods and policies to the liabilities derived from the output of the third-party software and other inputs, such as plan assets and contributions, to generate the exhibits found in our report.

Buck has an extensive review process in which the results of the liability calculations are checked using detailed sample life output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other funding outputs and the internal model are similarly reviewed in detail and at a higher level for accuracy, reasonability, and consistency with prior results. Buck also reviews the third-party model when significant changes are made to the software. This review is performed by experts within Buck who are familiar with applicable funding methods, as well as the manner in which the model generates its output. If significant changes are made to the internal model, extra checking and review are completed.

The results presented herewith were prepared solely for the Consolidated Public Retirement Board for the purposes herein stated and may not be appropriate to use for other purposes. Buck does not intend to benefit and assumes no duty or liability to other parties who receive this work. Use of this report for any other purposes or by anyone other than the Consolidated Public Retirement Board and its auditors may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. No one may make any representations or warranties based on any statements or conclusions contained in this report without Buck’s prior written consent.


We are Fellows of the Society of Actuaries and Members of the American Academy of Actuaries. We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about it.

Buck Global, LLC (Buck)



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David L. Driscoll, FSA, EA, MAAA, FCA  
Principal, Consulting Actuary



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Elizabeth A. Wiley, FSA, EA, MAAA, FCA  
Senior Consultant, Retirement Actuary



**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*State Police Death, Disability, and Retirement System*

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**SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS**

**Valuation Date:** July 1, 2022

**Funding Method and Basis for Assumptions**

The valuation is prepared under the Entry Age Cost Method with individually computed accrued liabilities. The Normal Cost is computed in aggregate. Entry is based on date of hire.

Experience studies are performed at least once in every five-year period. This valuation was prepared on the basis of assumptions that were recommended to and adopted by the Board based on the experience study covering the period from July 1, 2015, to June 30, 2020. These assumptions will remain in effect for valuation purposes until such time as the Board adopts revised demographic assumptions.

**Interest Rate and Expenses**

The valuation interest assumption is 7.25% per annum, with no loading for plan expenses.

**Pre-Retirement Mortality**

The Pub-2010 Safety Employee Mortality Tables, amount-weighted, projected generationally with Scale MP-2020.

**Post-Retirement Mortality**

Post-retirement mortality tables are as follows:

|                      |  |
|----------------------|--|
| Healthy Male:        | 98% of Pub-2010 Safety Retiree Male Table, median, amount-weighted, projected generationally with Scale MP-2020.         |
| Healthy Female:      | 99% of Pub-2010 Safety Retiree Female Table, median, amount-weighted, projected generationally with Scale MP-2020.       |
| Disabled Male:       | 124% of Pub-2010 Safety Disabled Male Table, amount-weighted, projected generationally with Scale MP-2020.               |
| Disabled Female:     | 100% of Pub-2010 Safety Disabled Female Table, amount-weighted, projected generationally with Scale MP-2020.             |
| Beneficiary Male:*   | 111% of Pub-2010 Contingent Survivor Male Table, median, amount-weighted, projected generationally with Scale MP-2020.   |
| Beneficiary Female:* | 109% of Pub-2010 Contingent Survivor Female Table, median, amount-weighted, projected generationally with Scale MP-2020. |

\* The credibility-weighted Pub-2010 Contingent Survivor mortality tables are also applied to spouses and designated beneficiaries while the member is alive.

**Salary Scales**

The valuation results reflect the \$10,000 annual pay increase effective July 1, 2022 for all actives members of Plan A. This flat-dollar increase was used in the valuation in place of the assumed salary scale for FY 2023.

Compensation is assumed to increase 4.00% per year. The inflation rate is 2.75%.

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
***State Police Death, Disability, and Retirement System***

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**Withdrawal from Service**

Withdrawal rates cease once an employee is eligible for normal retirement. A sample of withdrawal rates follows:

| Age | Rate of Withdrawal |
|-----|--------------------|
| 20  | 0.0267             |
| 30  | 0.0190             |
| 40  | 0.0114             |
| 50  | 0.0038             |

**Disablement Rates**

A sample of disablement rates, which cease once an employee is eligible for normal retirement, are as follows:

| Age | Rate of Disablement | Type of Disability   | Probability |
|-----|---------------------|----------------------|-------------|
| 30  | 0.0012              | Duty-Related Full    | 0.25        |
| 40  | 0.0031              | Duty-Related Partial | 0.60        |
| 50  | 0.0040              | Nonduty- Related     | 0.15        |
| 60  | 0.0040              |                      |             |

**Family Composition**

It is assumed that 90% of all members are married, with husbands 3 years older than their wives. Re-marriage rates are not used.

**Accrual of Future Service**

Active members are assumed to accrue 1 year of service for each future year of employment.

**Non-Contributory Service**

At retirement, a member is assumed to be granted 1.25 additional year of service for benefits due to allowable military service, plus three additional years for unused annual leave and/or unused sick leave for a total of 4.25 additional years.

**Retirement Rates**

87.5% of members are assumed to retire when first eligible for unreduced benefits at the earlier of age 50 and 20 years of service or any age and 25 years of service. An active member who has already attained eligibility for normal retirement has a 25% probability of retiring each year thereafter with 100% retiring on or after attainment of age 55.

**Asset Valuation Method**

Assets for valuation purposes are included at Market Value.

**Plan Contributions**

Both employee and employer contributions are assumed to be paid in the middle of the year.



West Virginia Consolidated Public Retirement Board  
Actuarial Section  
State Police Death, Disability, and Retirement System

Schedule of Active Member Valuation Data

| Valuation Date | Number | Annual Payroll | Annual Average Pay | % Change in Average Pay | Number of Employers |
|----------------|--------|----------------|--------------------|-------------------------|---------------------|
| 6/30/2022      | 3      | \$ 163,000     | \$ 54,333          | -2.1%                   | 1                   |
| 6/30/2021      | 4      | 222,000        | 55,500             | 1.4%                    | 1                   |
| 6/30/2020      | 4      | 219,000        | 54,750             | -14.0%                  | 1                   |
| 6/30/2019      | 6      | 382,000        | 63,667             | -6.8%                   | 1                   |
| 6/30/2018      | 20     | 1,366,000      | 68,300             | 14.6%                   | 1                   |
| 6/30/2017      | 39     | 2,325,000      | 59,615             | -16.1%                  | 1                   |
| 6/30/2016      | 42     | 2,985,000      | 71,071             | 8.0%                    | 1                   |
| 6/30/2015      | 52     | 3,422,000      | 65,808             | 0.8%                    | 1                   |
| 6/30/2014      | 74     | 4,829,000      | 65,257             | 7.9%                    | 1                   |
| 6/30/2013      | 99     | 5,988,000      | 60,485             | -3.6%                   | 1                   |

Schedule of Funding Progress (in thousands)

| Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) |           | Unfunded AAL (UAAL) (b-a) | Funded Ratio (a/b) | Covered Payroll (c) | UAAL as a % of Covered Payroll ((b-a)/c) |
|----------------|-------------------------------|-----------------------------------|-----------|---------------------------|--------------------|---------------------|--|
|                |                               | Entry Age (b)                     |           |                           |                    |                     |  |
| 7/1/2022       | \$ 767,205                    | \$ 806,356                        | \$ 39,151 | 95.1%                     | \$ 163             | 24019.0%            |  |
| 7/1/2021       | 851,533                       | 802,679                           | (48,854)  | 106.1%                    | 222                | -22006.3%           |  |
| 7/1/2020       | 675,604                       | 773,120                           | 97,516    | 87.4%                     | 219                | 44527.9%            |  |
| 7/1/2019       | 689,820                       | 767,118                           | 77,298    | 89.9%                     | 382                | 20235.1%            |  |
| 7/1/2018       | 682,803                       | 754,969                           | 72,166    | 90.4%                     | 1,366              | 5283.0%             |  |
| 7/1/2017       | 641,748                       | 739,828                           | 98,080    | 86.7%                     | 2,325              | 4218.5%             |  |
| 7/1/2016       | 578,798                       | 729,051                           | 150,253   | 79.4%                     | 2,985              | 5033.6%             |  |
| 7/1/2015       | 607,339                       | 717,362                           | 110,023   | 84.7%                     | 3,422              | 3215.2%             |  |
| 7/1/2014       | 601,077                       | 698,400                           | 97,323    | 86.1%                     | 4,829              | 2015.4%             |  |
| 7/1/2013       | 520,322                       | 679,931                           | 159,609   | 76.5%                     | 5,988              | 2665.5%             |  |

Solvency Test

| Valuation Date | (1)<br>Active Member Contributions | (2)<br>Terms, Retirees, and Beneficiaries | (3)<br>Active Members (Employer Financed Portion) |                | % of Accrued Liabilities Covered by Valuation Assets |        |         |
|----------------|------------------------------------|---|---|----------------|--|--------|---------|
|                |                                    |   | Valuation of Assets                               | (1)            | (2)  | (3)    |         |
| 6/30/2022      | \$ 733,843                         | \$ 801,482,000                            | \$ 4,140,157                                      | \$ 767,205,000 | 100.0%   | 100.0% | 845.6%  |
| 6/30/2021      | 912,484                            | 796,522,000                               | 5,244,516   | 851,533,000    | 100.0%   | 100.0% | 1031.5% |
| 6/30/2020      | 847,409                            | 767,477,000                               | 4,795,591   | 675,604,000    | 100.0%   | 87.9%  | 0.0%    |
| 6/30/2019      | 1,186,240                          | 759,154,000                               | 6,777,760   | 689,820,000    | 100.0%   | 90.7%  | 0.0%    |
| 6/30/2018      | 3,440,152                          | 731,985,000                               | 19,543,848  | 682,803,000    | 100.0%   | 92.8%  | 0.0%    |
| 6/30/2017      | 6,305,033                          | 695,522,000                               | 38,000,967  | 641,748,000    | 100.0%   | 91.4%  | 0.0%    |
| 6/30/2016      | 6,239,309                          | 687,180,000                               | 35,631,691  | 578,798,000    | 100.0%   | 83.3%  | 0.0%    |
| 6/30/2015      | 6,964,607                          | 669,771,000                               | 40,626,393  | 607,339,000    | 100.0%   | 89.6%  | 0.0%    |
| 6/30/2014      | 9,379,242                          | 634,008,000                               | 55,012,758  | 601,077,000    | 100.0%   | 93.3%  | 0.0%    |
| 6/30/2013      | 11,913,004                         | 595,963,000                               | 72,054,996  | 520,322,000    | 100.0%   | 85.3%  | 0.0%    |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*State Police Death, Disability, and Retirement System*

**Schedule of Retirees and Beneficiaries Added and Removed**

| Fiscal Year Ended | Added  |                   | Removed |                   | Year End |                   | % Increase in Annual Allowances | Average Annual Allowances |
|-------------------|--------|-------------------|---------|-------------------|----------|-------------------|---------------------------------|---------------------------|
|                   | Number | Annual Allowances | Number  | Annual Allowances | Number   | Annual Allowances |                                 |                           |
| 2022              | 13     | \$ 1,989,422      | (22)    | \$ 780,811        | 743      | \$ 51,437,834     | 2.4%                            | \$ 69,230                 |
| 2021              | 8      | 1,602,717         | (15)    | 598,560           | 752      | 50,229,223        | 2.0%                            | 66,794                    |
| 2020              | 13     | 2,260,665         | (19)    | 586,695           | 759      | 49,225,066        | 3.5%                            | 64,855                    |
| 2019              | 25     | 2,619,144         | (19)    | 596,854           | 765      | 47,551,096        | 4.4%                            | 62,158                    |
| 2018              | 27     | 2,811,688         | (12)    | 608,065           | 759      | 45,528,806        | 5.1%                            | 59,985                    |
| 2017              | 15     | 1,626,683         | (18)    | 271,233           | 744      | 43,325,183        | 3.2%                            | 58,233                    |
| 2016              | 23     | 877,188           | (22)    | 877,888           | 747      | 41,969,733        | 0.0%                            | 56,184                    |
| 2015              | 35     | 2,346,469         | (14)    | 739,302           | 746      | 41,970,433        | 6.7%                            | 56,261                    |
| 2014              | 34     | 1,921,276         | (14)    | 435,906           | 725      | 39,349,335        | 7.5%                            | 54,275                    |
| 2013              | 16     | 1,089,846         | (21)    | 751,139           | 705      | 36,589,971        | 3.7%                            | 51,901                    |

**Changes in Unfunded Actuarial Liability**

|   |                      |
|---|----------------------|
| Funding in Excess of Actuarial Liability, June 30, 2021 | \$ (48,854,000)      |
| Interest  | (4,171,000)          |
| Normal cost   | 97,000               |
| Contributions   | (17,868,000)         |
| Assumption changes                                      | -                    |
| Liability (Gain)/Loss                                   | (1,342,000)          |
| Actuarial Asset (Gain)/Loss                             | 111,289,000          |
| <b>Unfunded Actuarial Liability, June 30, 2022</b>      | <b>\$ 39,151,000</b> |

**Schedule of Contributions**

The Schedule of Contributions is included in the Required Supplementary Information provided in the Financial Section of this Annual Comprehensive Financial Report.

**Plan Provisions**

A discussion of plan provisions is included in Note 2 to the financial statements included in the Financial Section.



110 W. Berry Street  
Suite 1300

Fort Wayne, IN 46802

December 18, 2023

West Virginia Consolidated Public Retirement Board  
West Virginia State Police Retirement System  
601 57th Street SE, Suite 5  
Charleston, WV 25304

Dear Board Members,

We performed the annual actuarial valuation of the West Virginia State Police Retirement System (Plan B) as of July 1, 2022. The purpose of the actuarial valuation is to determine the actuarial liabilities of the System for funding purposes and to determine whether expected contributions will be sufficient to fulfill the System's long-term funding policy.

The valuation was based on membership data as of June 30, 2022, maintained by the West Virginia Consolidated Public Retirement Board, and financial information received from the West Virginia Investment Management Board. Buck reviewed the data for reasonableness and consistency with data provided for prior valuations but did not audit the data. The accuracy of the results of the valuation is dependent on the accuracy of the data.

The tables presented for Plan B in the actuarial section of this Annual Comprehensive Financial Report are based on information contained in our July 1, 2022, valuation report dated March 31, 2023. These tables include:

#### Actuarial Section

- Summary of Actuarial Methods and Assumptions
- Schedule of Active Member Valuation Data
- Schedule of Funding Progress
- Solvency Test
- Schedule of Retirees and Beneficiaries Added and Removed
- Changes in Unfunded Actuarial Liability

#### Financial Section

- Schedules of Contributions

All schedules in the Actuarial Section above were completed by the West Virginia Consolidated Public Retirement Board. Buck has reviewed these schedules for accuracy and consistency with the information provided in our July 1, 2022, valuation report.

The report presents fairly the actuarial position of Plan B as of July 1, 2022, in accordance with Actuarial Standards of Practice (ASOP) applied on a basis consistent with that of the preceding valuation. In our opinion, the

assumptions used in preparing the liabilities and costs are individually reasonable with respect to Plan B experience and represent our best estimate of anticipated future experience of Plan B. The assumptions were developed in accordance with the guidance set forth in applicable Actuarial Standards of Practice, including ASOPs 27 and 35. The mortality assumptions were developed in accordance with the recommendation that an appropriate margin for future improvement in mortality beyond the measurement date be included.

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

Where presented, the “funded ratio” and “unfunded accrued liability” are typically measured using the actuarial value of assets. Use of the market value of assets instead would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but does not represent the funded status of the plan if the plan were to settle (i.e., purchase annuities to cover) a portion or all of its liabilities.

Actuarial Standard of Practice No. 56 (ASOP 56) provides guidance to actuaries performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. Buck uses the following:

- third-party software to calculate the liabilities associated with the provisions of the plan using data, assumptions, and funding methods as specified in our report, and
- an internally developed model that applies applicable funding methods and policies to the liabilities derived from the output of the third-party software and other inputs, such as plan assets and contributions, to generate the exhibits found in our report.

Buck has an extensive review process in which the results of the liability calculations are checked using detailed sample life output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other funding outputs and the internal model are similarly reviewed in detail and at a higher level for accuracy, reasonability, and consistency with prior results. Buck also reviews the third-party model when significant changes are made to the software. This review is performed by experts within Buck who are familiar with applicable funding methods, as well as the manner in which the model generates its output. If significant changes are made to the internal model, extra checking and review are completed.

The results presented herewith were prepared solely for the Consolidated Public Retirement Board for the purposes herein stated and may not be appropriate to use for other purposes. Buck does not intend to benefit and assumes no duty or liability to other parties who receive this work. Use of this report for any other purposes or by anyone other than the Consolidated Public Retirement Board and its auditors may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. No one may make any representations or warranties based on any statements or conclusions contained in this report without Buck’s prior written consent.

We are Fellows of the Society of Actuaries and Members of the American Academy of Actuaries. We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about it.

Buck Global, LLC (Buck)

*David L. Driscoll*

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David L. Driscoll, FSA, EA, MAAA, FCA  
Principal, Consulting Actuary

*Elizabeth A. Wiley*

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Elizabeth A. Wiley, FSA, EA, MAAA, FCA  
Senior Consultant, Retirement Actuary



**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*State Police Retirement System*

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**SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS**

**Valuation Date:** July 1, 2022

**Funding Method and Basis for Assumptions**

The valuation is prepared under the Entry Age Normal Cost Method with individually computed accrued liabilities. The Normal Cost is computed in aggregate. Entry age is based on date of hire.

Experience studies are performed at least once in every five-year period. This valuation was prepared on the basis of assumptions that were recommended to and adopted by the Board based on an experience study covering the period from July 1, 2015, to June 30, 2020. These assumptions will remain in effect for valuation purposes until such time as the Board adopts revised demographic assumptions.

**Interest Rate and Expenses**

The valuation interest assumption is 7.25% per annum, with no loading for plan expenses.

**Pre-Retirement Mortality**

Pub-2010 Safety Employee Mortality Tables, amount-weighted, projected generationally with Scale MP-2020.

**Post-Retirement Mortality**

Post-retirement mortality tables are as follows:

- Healthy Male: 98% of Pub-2010 Safety Retiree Male Table, median, amount-weighted, projected generationally with Scale MP-2020.
- Healthy Female: 99% of Pub-2010 Safety Retiree Female Table, median, amount-weighted, projected generationally with Scale MP-2020.
- Disabled Male: 124% of Pub-2010 Safety Disabled Male Table, amount-weighted, projected generationally with Scale MP-2020.
- Disabled Female: 100% of Pub-2010 Safety Disabled Female Table, amount-weighted, projected generationally with Scale MP-2020.
- Beneficiary Male:\* 111% of Pub-2010 Contingent Survivor Male Table, median, amount-weighted, projected generationally with Scale MP-2020.
- Beneficiary Female:\* 109% of Pub-2010 Contingent Survivor Female Table, median, amount-weighted, projected generationally with Scale MP-2020.

\* The credibility-weighted Pub-2010 Contingent Survivor mortality tables are also applied to spouses and designated beneficiaries while the member is alive.

**Salary Scales**

The valuation results reflect the \$10,000 annual pay increase effective July 1, 2022 for all actives members of Plan A. This flat-dollar increase was used in the valuation in place of the assumed salary scale for FY 2023. Compensation is assumed to increase 4.00% per year service. The inflation rate is 2.75%.

**Withdrawal from Service**

Withdrawal rates cease once an employee is eligible for normal retirement. A sample of withdrawal rates follows:

| Age | Rate of Withdrawal |
|-----|--------------------|
| 20  | 0.0684             |
| 30  | 0.0488             |
| 40  | 0.0216             |
| 50  | 0.0096             |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*State Police Retirement System*

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**Disablement Rates**

No disablements are assumed to occur after the later of age 55 and the age first eligible for retirement. A sample of disablement rates follows:

| Age | Rate of Disablement | Type of Disability   | Probability |
|-----|---------------------|----------------------|-------------|
| 30  | 0.0012              | Duty-Related Full    | 0.25        |
| 40  | 0.0031              | Duty-Related Partial | 0.60        |
| 50  | 0.0040              | Nonduty Related      | 0.15        |
| 60  | 0.0040              |                      |             |

**Family Composition**

It is assumed that 90% of members are married, with husbands 3 years older than their wives. Remarriage rates are not used.

**Accrual of Future Service**

It is assumed that active members will accrue one year of service for each future year of employment.

**Non-Contributory Service**

At retirement, a member is assumed to be granted 1.25 additional year of service for benefits due to allowable military service. Members hired before July 1, 2015, are also assumed to be granted three additional years for unused annual leave and/or unused sick leave for a total of 4.25 additional years.

**Retirement Rates**

60% of members are assumed to retire when first eligible for unreduced benefits at the earlier of age 50 and 25 years of service or age 52 and 20 years of service. An active member who has already attained eligibility for normal retirement has a 20% probability of retiring each year thereafter with 100% retiring on or after attainment of age 55.

**Asset Valuation Method**

Assets for valuation purposes are included at Market Value.

**Plan Contributions**

Plan Contributions, both employee and employer, are assumed to be paid in the middle of the year.



West Virginia Consolidated Public Retirement Board  
 Actuarial Section  
 State Police Retirement System

Schedule of Active Member Valuation Data

| Valuation Date | Number | Annual Payroll | Annual Average Pay | % Change in Average Pay | Number of Employers |
|----------------|--------|----------------|--------------------|-------------------------|---------------------|
| 6/30/2022      | 590    | \$ 38,809,000  | \$ 65,778          | 13.5%                   | 1                   |
| 6/30/2021      | 606    | 35,120,000     | 57,954             | 3.8%                    | 1                   |
| 6/30/2020      | 626    | 34,946,000     | 55,824             | 0.9%                    | 1                   |
| 6/30/2019      | 613    | 33,904,000     | 55,308             | 1.9%                    | 1                   |
| 6/30/2018      | 570    | 30,938,000     | 54,277             | 0.0%                    | 1                   |
| 6/30/2017      | 595    | 32,291,000     | 54,271             | 5.2%                    | 1                   |
| 6/30/2016      | 611    | 31,530,000     | 51,604             | 1.4%                    | 1                   |
| 6/30/2015      | 625    | 31,792,000     | 50,867             | 2.7%                    | 1                   |
| 6/30/2014      | 597    | 29,574,000     | 49,538             | -0.2%                   | 1                   |
| 6/30/2013      | 558    | 27,701,000     | 49,643             | 1.5%                    | 1                   |

Schedule of Funding Progress (in thousands)

| Valuation Date | Actuarial Accrued                |                                  |                              |        | Funded Ratio<br>(a/b) | Covered Payroll<br>(c) | UAAL as a % of Covered Payroll<br>((b-a)/c) |
|----------------|----------------------------------|----------------------------------|------------------------------|--------|-----------------------|------------------------|---|
|                | Actuarial Value of Assets<br>(a) | Liability (AAL) Entry Age<br>(b) | Unfunded AAL (UAAL)<br>(b-a) |        |                       |                        |   |
| 7/1/2022       | \$ 289,303                       | \$ 334,828                       | \$ 45,525                    | 86.4%  | \$ 38,809             | 117.3%                 |   |
| 7/1/2021       | 301,158                          | 289,745                          | (11,413)                     | 103.9% | \$ 35,120             | -32.5%                 |   |
| 7/1/2020       | 220,565                          | 249,612                          | 29,047                       | 88.4%  | 34,946                | 83.1%                  |   |
| 7/1/2019       | 207,102                          | 225,630                          | 18,528                       | 91.8%  | 33,904                | 54.6%                  |   |
| 7/1/2018       | 188,915                          | 185,641                          | (3,274)                      | 101.8% | 30,938                | -10.6%                 |   |
| 7/1/2017       | 166,688                          | 169,890                          | 3,202                        | 98.1%  | 32,291                | 9.9%                   |   |
| 7/1/2016       | 138,569                          | 145,326                          | 6,757                        | 95.4%  | 31,530                | 21.4%                  |   |
| 7/1/2015       | 131,678                          | 130,132                          | (1,546)                      | 101.2% | 31,792                | -4.9%                  |   |
| 7/1/2014       | 120,572                          | 114,314                          | (6,258)                      | 105.5% | 29,574                | -21.2%                 |   |
| 7/1/2013       | 96,092                           | 101,503                          | 5,411                        | 94.7%  | 27,701                | 19.5%                  |   |

Solvency Test

| Valuation Date |                                    |   |   |                     | % of Accrued Liabilities Covered by Valuation Assets |        |        |
|----------------|------------------------------------|---|---|---------------------|--|--------|--------|
|                | (1)<br>Active Member Contributions | (2)<br>Terms, Retirees, and Beneficiaries | (3)<br>Active Members (Employer Financed Portion) | Valuation of Assets | (1)  | (2)    | (3)    |
| 6/30/2022      | \$ 64,768,809                      | \$ 85,942,000                             | \$ 184,117,191                                    | \$289,303,000       | 100.0%   | 100.0% | 75.3%  |
| 6/30/2021      | 63,724,695                         | 65,870,000                                | 160,150,305                                       | 301,158,000         | 100.0%   | 100.0% | 107.1% |
| 6/30/2020      | 64,167,341                         | 37,282,000                                | 148,162,659                                       | 220,565,000         | 100.0%   | 100.0% | 80.4%  |
| 6/30/2019      | 60,679,470                         | 26,652,000                                | 138,298,530                                       | 207,102,000         | 100.0%   | 100.0% | 86.6%  |
| 6/30/2018      | 56,534,849                         | 20,289,000                                | 108,817,151                                       | 188,915,000         | 100.0%   | 100.0% | 103.1% |
| 6/30/2017      | 52,882,128                         | 16,048,000                                | 100,959,872                                       | 166,688,000         | 100.0%   | 100.0% | 96.8%  |
| 6/30/2016      | 48,209,092                         | 13,601,000                                | 83,515,908  | 138,569,000         | 100.0%   | 100.0% | 91.9%  |
| 6/30/2015      | 43,690,814                         | 11,150,000                                | 75,291,186  | 131,678,000         | 100.0%   | 100.0% | 102.1% |
| 6/30/2014      | 39,362,809                         | 9,763,000                                 | 65,188,191  | 120,572,000         | 100.0%   | 100.0% | 109.6% |
| 6/30/2013      | 34,875,692                         | 8,776,000                                 | 57,851,308  | 96,092,000          | 100.0%   | 100.0% | 90.6%  |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
**State Police Retirement System**

**Schedule of Retirees and Beneficiaries Added and Removed**

| Fiscal Year | Added |              | Removed           |        | Year End          |              | % Increase in Annual Allowances | Average Annual Allowances |
|-------------|-------|--------------|-------------------|--------|-------------------|--------------|---------------------------------|---------------------------|
|             | Ended | Number       | Annual Allowances | Number | Annual Allowances | Number       |                                 |                           |
| 2022        | 25    | \$ 1,989,685 | -                 | \$ -   | 119               | \$ 5,291,123 | 60.3%                           | \$ 44,463                 |
| 2021        | 35    | 1,161,284    | -                 | -      | 94                | 3,301,438    | 54.3%                           | 35,122                    |
| 2020        | 19    | 667,829      | -                 | -      | 59                | 2,140,154    | 45.4%                           | 36,274                    |
| 2019        | 7     | 286,245      | -                 | -      | 40                | 1,472,325    | 24.1%                           | 36,808                    |
| 2018        | 7     | 280,891      | (1)               | 51,831 | 33                | 1,186,080    | 23.9%                           | 35,942                    |
| 2017        | 4     | 189,448      | (1)               | 43,640 | 27                | 957,020      | 18.0%                           | 35,445                    |
| 2016        | 4     | 171,345      | (1)               | 30,260 | 24                | 811,212      | 11.3%                           | 33,801                    |
| 2015        | 2     | 87,512       | -                 | -      | 21                | 729,127      | 15.4%                           | 34,720                    |
| 2014        | -     | -            | -                 | -      | 19                | 632,053      | 7.0%                            | 33,266                    |
| 2013        | 2     | 94,333       | (1)               | 30,101 | 19                | 590,653      | 15.3%                           | 31,087                    |

**Changes in Unfunded Actuarial Liability**

|  |                      |
|--|----------------------|
| Funded in Excess of Actuarial Liability, June 30, 2021 | \$ (11,413,000)      |
| Interest   | (620,000)            |
| Normal cost  | 9,651,000            |
| Contributions  | (13,823,000)         |
| Assumption changes                                     | -                    |
| Liability (Gain)/Loss                                  | 19,674,000           |
| Actuarial Asset (Gain)/Loss                            | 42,056,000           |
| <b>Unfunded Actuarial Liability, June 30, 2022.</b>    | <b>\$ 45,525,000</b> |

**Schedule of Contributions**

The Schedule of Contributions is included in the Required Supplementary Information provided in the Financial Section of this Annual Comprehensive Financial Report.

**Plan Provisions**

A discussion of plan provisions is included in Note 2 to the financial statements included in the Financial Section.



## Consolidated Public Retirement Board

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**EXECUTIVE DIRECTOR**  
Jeffrey E. Fleck

**BOARD CHAIRMAN**  
Joseph G. Bunn

December 18, 2023

West Virginia Consolidated Public Retirement Board  
West Virginia Deputy Sheriffs' Retirement System  
601 57th Street SE, Suite 5  
Charleston, WV 25304

Dear Board Members:

We performed the annual actuarial valuation of the West Virginia Deputy Sheriffs' Retirement System (DSRS) as of July 1, 2022. The purpose of the actuarial valuation is to determine the actuarial liabilities of the System for funding purposes and to determine whether expected contributions will be sufficient to fulfill the System's long-term funding policy.

The valuation was based on membership data as of June 30, 2022, maintained by the West Virginia Consolidated Public Retirement Board, and financial information received from the West Virginia Investment Management Board. Census and financial data were not audited by the West Virginia Consolidated Public Retirement Board but were reviewed for consistency. The accuracy of the results of the valuation is dependent on the accuracy of the data.

The tables presented for DSRS in the actuarial section of this Annual Comprehensive Financial Report are based on information contained in our July 1, 2022, valuation report dated April 2023. These tables include:

### Actuarial Section

- Summary of Actuarial Methods and Assumptions
- Schedule of Active Member Valuation Data
- Schedule of Funding Progress
- Solvency Test
- Schedule of Retirees and Beneficiaries Added and Removed
- Changes in Unfunded Actuarial Liability

### Financial Section

- Schedules of Contributions

All schedules in the Actuarial Section above were completed by the West Virginia Consolidated Public Retirement Board. The CPRB has reviewed these schedules for accuracy and consistency with the information provided in our July 1, 2022, valuation report.

This report presents fairly the actuarial position of DSRS as of July 1, 2022, in accordance with Actuarial Standards of Practice (ASOP) applied on a basis consistent with that of the preceding valuation. In my opinion, the assumptions used in preparing the liabilities and costs are individually reasonable with respect to DSRS experience and represent my best estimate of anticipated future experience of DSRS.

The assumptions were developed in accordance with the guidance set forth in applicable Actuarial Standards of Practice, including ASOPs 27 and 35. In particular, the mortality assumptions were developed in accordance with the recommendation that an appropriate margin for future improvement in mortality beyond the measurement date be included.

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

Where presented, the “funded ratio” and “unfunded accrued liability” are typically measured using the actuarial value of assets. It should be noted that use of the market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratios presented are appropriate for evaluating the need and level of future contributions but make no assessment of the funded status of the plan if it were to settle (i.e., purchase annuities to cover) a portion or all of its liabilities.

Actuarial Standard of Practice No. 56 (“ASOP 56”) provides guidance to actuaries when performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. The CPRB uses the following:

- third-party software to calculate the liabilities associated with the provisions of the plan using data, assumptions and funding methods as specified in our report.
- an internally developed model that applies applicable funding methods and policies to the liabilities derived from the output of the third-party software and other inputs, such as plan assets and contributions, to generate the exhibits found in our report.

The CPRB has an extensive review process whereby the results of the liability calculations are checked using detailed sample output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other outputs and the internal model are similarly reviewed in detail and at a high level for accuracy, reasonability and consistency with prior results. The CPRB also reviews the third-party model when significant changes are made to the software or model. The review is performed by the CPRB Board Actuary who is familiar with applicable funding methods as well as the manner in which the model generates its output.

The results presented herewith were prepared solely by the West Virginia Consolidated Public Retirement Board for the purposes herein stated and may not be appropriate to use for other purposes. Use of this report for any other purposes or by anyone other than the West Virginia Consolidated Public Retirement Board and its auditors may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. No one may make any representations or warranties based on any statements or conclusions contained in this report without prior written consent of the CPRB Board Actuary.

I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions about it.

Respectfully,

Kenneth M. Woodson Jr.

Kenneth M. Woodson Jr., FSA, MAAA, Ph.D.

CPRB Board Actuary



## SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

**Actuarial Valuation Date:** July 1, 2022

### **Funding Method and Basis of Assumptions**

The valuation is prepared under the Entry Age Cost Method with individually computed accrued liabilities. The Normal Cost is computed in aggregate.

Experience studies are performed at least once in every five-year period. This valuation was prepared on the basis of assumptions that were recommended to and adopted by the Board based on an experience study covering the period from July 1, 2015, to June 30, 2020. These assumptions will remain in effect for valuation purposes until such time as the Board adopts revised assumptions.

### **Interest Return and Expenses**

The interest rate assumption is 7.25% annually, net of investment and administrative expenses. The rate is applied to the interest return on Trust Fund assets as well as the discount rate on future expected benefit payments.

### **Salary Scale**

An annual salary increase rate of 5.25% in each of the first two years of service, decreasing to 4.75% for years three through five, 4.25% for years six through ten years and 3.75% for all years of service in excess of the first ten years.

### **Pre-Retirement Mortality**

100% of Pub-2010 Safety Employee Mortality Tables, median, amount-weighted, projected generationally with Scale MP-2020.

### **Post-Retirement Mortality**

Post-retirement mortality tables are as follows:

|                     |  |
|---------------------|--|
| Healthy Male:       | 98% of Pub-2010 Safety Retiree Male Table, median, amount-weighted, projected generationally with Scale MP-2020.         |
| Healthy Female:     | 99% of Pub-2010 Safety Retiree Female Table, median, amount-weighted, projected generationally with Scale MP-2020.       |
| Disabled Male:      | 124% of Pub-2010 Safety Disabled Male Table, amount-weighted, projected generationally with Scale MP-2020.               |
| Disabled Female:    | 100% of Pub-2010 Safety Disabled Female Table, amount-weighted, projected generationally with Scale MP-2020.             |
| Beneficiary Male:   | 111% of Pub-2010 Contingent Survivor Male Table, median, amount-weighted, projected generationally with Scale MP-2020.   |
| Beneficiary Female: | 109% of Pub-2010 Contingent Survivor Female Table, median, amount-weighted, projected generationally with Scale MP-2020. |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*Deputy Sheriff Retirement System*

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**Withdrawal Rates**

Withdrawal rates predict termination of employment prior to unreduced retirement eligibility. A sample of withdrawal rates by age are:

| Age | Rate of Withdrawal |
|-----|--------------------|
| 30  | 0.0880             |
| 40  | 0.0528             |
| 50+ | 0.0500             |

**Disability Rates**

Disability rates predict an active member becoming disabled prior to unreduced retirement eligibility. A sample of disability rates by age are:

| Age | Rate of Disablement |
|-----|---------------------|
| 30  | 0.0012              |
| 40  | 0.0031              |
| 50+ | 0.0040              |

**Disability Rates - Type of Disability**

It is assumed that members eligible for unreduced retirement will elect retirement prior to becoming disabled. It is also assumed that retired members will not become disabled following retirement due to duty related causes incurred prior to retirement.

Disability retirement benefits vary by type of disability. Disability retirements are assumed to break down in the following types:

|                                 |     |
|---------------------------------|-----|
| Duty Related Full Disability    | 50% |
| Duty Related Partial Disability | 25% |
| Non-Duty Full Disability        | 20% |
| Non-Duty Partial Disability     | 5%  |

**Family Composition**

It is assumed that 90% of members are married, with husbands 3 years older than their wives. Remarriage rates are not used.

**Accrual of Future Service**

Employment as a deputy sheriff is considered a full-time professional position. All active members are assumed to complete sufficient hours to accrue one year of service in each future year of employment.



**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
***Deputy Sheriff Retirement System***

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**Non-Contributory Service Credits for Military Service and Unused Leave at Retirement**

At Normal or Early retirement, a member is assumed to be granted 1 additional year of service for benefits due to allowable military service, plus 2 additional years for unused annual leave and/or unused sick leave for a total of 3 additional years.

**Retirement Rates**

Members who become eligible for unreduced retirement benefits are assumed to have a 16% probability of retiring each year through age 59, with 20% assumed to retire each year through age 64. On or after age at 65, 100% of members are assumed to retire.

**Asset Valuation Method**

Four-year 25% level smoothing of actuarial gain or (loss) on trust fund return:

- Implemented over 4 years, prospectively commencing July 1, 2020 for the experience for the trust year ending June 30, 2020.
- Actuarial gain or (loss) on assets is calculated as the difference between the expected return under valuation assumptions based on the smoothed Actuarial Value of Assets and the actual trust fund return.
- Actuarial gain or (loss) is recognized at 25% of the original amount each year until fully recognized in the fourth year.
- Total accumulated deferred gain or (loss) amounts are used to adjust the reported Market Value of Assets to determine the Actuarial Value of Assets.

**Plan Contributions**

Member and employer contributions are calculated as a percentage of total members' payroll. For interest calculation purposes, all amounts are treated as being deposited on an average of half-way through the Plan year.

**Fee Contributions under Section 7-14E-2**

A portion of fees generated by each sheriff department for reports are contributed to the DSRS Trust Fund. Fees are deposited throughout the year. For interest calculation purposes they are treated as being deposited on an average of half-way through the Plan year.

Fees are estimated based upon historical amounts contributed to the Trust Fund. For the purposes of analyzing the adequacy of total funding for DSRS in meeting the DSRS funding target, an average annual fee income of \$425,000 has been assumed to continue in this and all future years.

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
**Deputy Sheriff Retirement System**

**Schedule of Active Member Valuation Data**

| Valuation Date | Number | Annual Payroll | Annual Average Pay | % Change in Average Pay | Number of Employers |
|----------------|--------|----------------|--------------------|-------------------------|---------------------|
| 6/30/2022      | 1,085  | \$ 65,637,000  | \$ 60,495          | 5.4%                    | 55                  |
| 6/30/2021      | 1,085  | 62,284,000     | 57,405             | 5.1%                    | 55                  |
| 6/30/2020      | 1,086  | 59,289,000     | 54,594             | 2.3%                    | 55                  |
| 6/30/2019      | 1,081  | 57,698,000     | 53,375             | 4.4%                    | 55                  |
| 6/30/2018      | 1,050  | 53,676,000     | 51,120             | 4.3%                    | 55                  |
| 6/30/2017      | 1,018  | 49,915,000     | 49,032             | 0.2%                    | 55                  |
| 6/30/2016      | 1,042  | 51,004,000     | 48,948             | 2.1%                    | 55                  |
| 6/30/2015      | 1,024  | 49,081,000     | 47,931             | 3.0%                    | 55                  |
| 6/30/2014      | 1,002  | 46,634,000     | 46,541             | 2.1%                    | 55                  |
| 6/30/2013      | 990    | 45,106,000     | 45,562             | 2.3%                    | 53                  |

**Schedule of Funding Progress (in thousands)**

| Valuation Date | Actuarial Accrued             |                               | Unfunded AAL (UAAL) | Funded Ratio (a/b) | Covered Payroll (c) | UAAL as a % of            |
|----------------|-------------------------------|-------------------------------|---------------------|--------------------|---------------------|---------------------------|
|                | Actuarial Value of Assets (a) | Liability (AAL) Entry Age (b) |                     |                    |                     | Covered Payroll ((b-a)/c) |
| 7/1/2022       | \$ 298,002                    | \$ 337,065                    | \$ 39,063           | 88.4%              | \$ 65,637           | 59.5%                     |
| 7/1/2021       | 277,320                       | 316,860                       | 39,540              | 87.5%              | 62,284              | 63.5%                     |
| 7/1/2020       | 247,776                       | 277,817                       | 30,041              | 89.2%              | 59,289              | 50.7%                     |
| 7/1/2019       | 233,659                       | 260,750                       | 27,091              | 89.6%              | 57,698              | 47.0%                     |
| 7/1/2018       | 220,514                       | 239,516                       | 19,002              | 92.1%              | 53,676              | 35.4%                     |
| 7/1/2017       | 200,820                       | 203,293                       | 2,473               | 98.8%              | 49,915              | 5.0%                      |
| 7/1/2016       | 172,626                       | 195,681                       | 23,055              | 88.2%              | 51,004              | 45.2%                     |
| 7/1/2015       | 171,358                       | 188,243                       | 16,885              | 91.0%              | 49,081              | 34.4%                     |
| 7/1/2014       | 162,748                       | 180,677                       | 17,929              | 90.1%              | 46,634              | 38.4%                     |
| 7/1/2013       | 135,756                       | 169,260                       | 33,504              | 80.2%              | 45,106              | 74.3%                     |

**Solvency Test**

| Valuation Date | (1) Active Member Contributions | (2) Terms, Retirees, and Beneficiaries | (3) Active Members (Employer Financed Portion) | Valuation of Assets | % of Accrued Liabilities Covered by Valuation Assets |        |       |
|----------------|---------------------------------|--|--|---------------------|--|--------|-------|
|                |                                 |  |  |                     | (1)  | (2)    | (3)   |
| 6/30/2022      | \$ 58,431,244                   | \$ 175,985,000                         | \$ 102,648,756                                 | \$298,002,000       | 100.0%   | 100.0% | 62.0% |
| 6/30/2021      | 55,903,424                      | 165,153,000                            | 95,803,576                                     | 277,320,000         | 100.0%   | 100.0% | 58.7% |
| 6/30/2020      | 54,371,378                      | 140,698,000                            | 82,747,622                                     | 247,776,000         | 100.0%   | 100.0% | 63.7% |
| 6/30/2019      | 50,450,775                      | 132,668,000                            | 77,631,225                                     | 233,659,000         | 100.0%   | 100.0% | 65.1% |
| 6/30/2018      | 47,847,056                      | 122,551,000                            | 69,117,944                                     | 220,514,000         | 100.0%   | 100.0% | 72.5% |
| 6/30/2017      | 44,861,806                      | 106,203,000                            | 52,228,194                                     | 200,820,000         | 100.0%   | 100.0% | 95.3% |
| 6/30/2016      | 42,061,818                      | 96,344,000                             | 57,275,182                                     | 172,626,000         | 100.0%   | 100.0% | 59.7% |
| 6/30/2015      | 38,786,095                      | 87,709,000                             | 61,747,905                                     | 171,358,000         | 100.0%   | 100.0% | 72.7% |
| 6/30/2014      | 36,727,472                      | 84,203,000                             | 59,746,528                                     | 162,748,000         | 100.0%   | 100.0% | 70.0% |
| 6/30/2013      | 34,909,631                      | 77,437,000                             | 56,913,369                                     | 135,756,000         | 100.0%   | 100.0% | 41.1% |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
***Deputy Sheriff Retirement System***

**Schedule of Retirees and Beneficiaries Added and Removed**

| Fiscal Year<br>Ended | Added  |                      | Removed |                      | Year End |                      | % Increase in<br>Annual<br>Allowances | Average<br>Annual<br>Allowances |
|----------------------|--------|----------------------|---------|----------------------|----------|----------------------|---------------------------------------|---------------------------------|
|                      | Number | Annual<br>Allowances | Number  | Annual<br>Allowances | Number   | Annual<br>Allowances |                                       |                                 |
| 2022                 | 37     | \$ 1,391,800         | (14)    | \$ 274,342           | 517      | \$ 14,483,499        | 8.4%                                  | \$ 28,015                       |
| 2021                 | 48     | 1,736,605            | (10)    | 630,829              | 494      | 13,366,041           | 9.0%                                  | 27,057                          |
| 2020                 | 30     | 1,085,378            | (6)     | 164,861              | 456      | 12,260,265           | 8.1%                                  | 26,887                          |
| 2019                 | 35     | 1,791,272            | (6)     | 63,273               | 432      | 11,339,748           | 18.0%                                 | 26,249                          |
| 2018                 | 22     | 702,906              | (2)     | 47,862               | 403      | 9,611,749            | 7.3%                                  | 23,850                          |
| 2017                 | 45     | 905,155              | (5)     | 120,872              | 383      | 8,956,705            | 9.6%                                  | 23,386                          |
| 2016                 | 12     | 425,742              | (8)     | 170,848              | 343      | 8,172,422            | 3.2%                                  | 23,826                          |
| 2015                 | 31     | 914,923              | (9)     | 194,873              | 339      | 7,917,528            | 10.5%                                 | 23,356                          |
| 2014                 | 26     | 853,364              | (8)     | 149,532              | 317      | 7,168,032            | 8.3%                                  | 22,612                          |
| 2013                 | 28     | 784,788              | (12)    | 204,814              | 299      | 6,616,848            | 7.7%                                  | 22,130                          |

**Changes in Unfunded Actuarial Liability**

|   |               |
|---|---------------|
| Unfunded Actuarial Liability, June 30, 2021 | \$ 39,540,000 |
| Interest                                    | 3,036,000     |
| Normal cost                                 | 9,305,000     |
| Contributions                               | (14,193,000)  |
| Assumption changes                          | -             |
| Liability (Gain)/Loss                       | 3,276,000     |
| Actuarial Asset (Gain)/Loss                 | (1,901,000)   |
| Unfunded Actuarial Liability, June 30, 2022 | \$ 39,063,000 |

**Schedule of Contributions**

The Schedule of Contributions is included in the Required Supplementary Information provided in the Financial Section of this Annual Comprehensive Financial Report.

**Plan Provisions**

A discussion of plan provisions is included in Note 2 to the financial statements included in the Financial Section.





110 W. Berry Street  
Suite 1300

Fort Wayne, IN 46802

December 18, 2023

West Virginia Consolidated Public Retirement Board  
West Virginia Judges' Retirement System  
601 57th Street SE, Suite 5  
Charleston, WV 25304

Dear Board Members,

We performed the annual actuarial valuation of the West Virginia Judges' Retirement System (JRS) as of July 1, 2022. The purpose of the actuarial valuation is to determine the actuarial liabilities of the System for funding purposes and to determine whether expected contributions will be sufficient to fulfill the System's long-term funding policy.

The valuation was based on membership data as of June 30, 2022, maintained by the West Virginia Consolidated Public Retirement Board, and financial information received from the West Virginia Investment Management Board. Buck reviewed the data for reasonableness and consistency with data provided for prior valuations but did not audit the data. The accuracy of the results of the valuation is dependent on the accuracy of the data.

The tables presented for JRS in the actuarial section of this Annual Comprehensive Financial Report are based on information contained in our July 1, 2022, valuation report dated March 31, 2023. These tables include:

#### Actuarial Section

- Summary of Actuarial Methods and Assumptions
- Schedule of Active Member Valuation Data
- Schedule of Funding Progress
- Solvency Test
- Schedule of Retirees and Beneficiaries Added and Removed
- Changes in Unfunded Actuarial Liability

#### Financial Section

- Schedules of Contributions

All schedules in the Actuarial Section above were completed by the West Virginia Consolidated Public Retirement Board. Buck has reviewed these schedules for accuracy and consistency with the information provided in our July 1, 2022, valuation report.

The report presents fairly the actuarial position of JRS as of July 1, 2022, in accordance with Actuarial Standards of Practice (ASOP) applied on a basis consistent with that of the preceding valuation. In our opinion, the assumptions used in preparing the liabilities and costs are individually reasonable with respect to JRS experience and represent our best estimate of anticipated future experience of JRS. The assumptions were developed in accordance with the guidance set forth in applicable Actuarial Standards of Practice, including ASOPs 27 and 35. The mortality assumptions were developed in accordance with the recommendation that an appropriate margin for future improvement in mortality beyond the measurement date be included.

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

Where presented, the “funded ratio” and “unfunded accrued liability” are typically measured using the actuarial value of assets. Use of the market value of assets instead would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but does not represent the funded status of the plan if the plan were to settle (i.e., purchase annuities to cover) a portion or all of its liabilities.

Actuarial Standard of Practice No. 56 (ASOP 56) provides guidance to actuaries performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. Buck uses the following:

- third-party software to calculate the liabilities associated with the provisions of the plan using data, assumptions, and funding methods as specified in our report, and
- an internally developed model that applies applicable funding methods and policies to the liabilities derived from the output of the third-party software and other inputs, such as plan assets and contributions, to generate the exhibits found in our report.

Buck has an extensive review process in which the results of the liability calculations are checked using detailed sample life output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other funding outputs and the internal model are similarly reviewed in detail and at a higher level for accuracy, reasonability, and consistency with prior results. Buck also reviews the third-party model when significant changes are made to the software. This review is performed by experts within Buck who are familiar with applicable funding methods, as well as the manner in which the model generates its output. If significant changes are made to the internal model, extra checking and review are completed.

The results presented herewith were prepared solely for the Consolidated Public Retirement Board for the purposes herein stated and may not be appropriate to use for other purposes. Buck does not intend to benefit and assumes no duty or liability to other parties who receive this work. Use of this report for any other purposes or by anyone other than the Consolidated Public Retirement Board and its auditors may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. No one may make any representations or warranties based on any statements or conclusions contained in this report without Buck’s prior written consent.

We are Fellows of the Society of Actuaries and Members of the American Academy of Actuaries. We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about it.

Buck Global, LLC (Buck)

*David L. Driscoll*

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David L. Driscoll, FSA, EA, MAAA, FCA  
Principal, Consulting Actuary

*Elizabeth A. Wiley*

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Elizabeth A. Wiley, FSA, EA, MAAA, FCA  
Senior Consultant, Retirement Actuary





## SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Valuation Date: July 1, 2022

### Funding Method and Basis for Assumptions

The valuation is prepared under the Entry Age Normal Cost Method with individually computed accrued liabilities. The Normal Cost is computed in aggregate. Entry is based on date of hire. Active liabilities include amounts calculated for judges currently participating in the Public Employees' Retirement System (PERS) who may in the future transfer into the Judges' Retirement System (JRS) with an adjustment for the anticipated transfer of required member contributions.

Experience studies are performed at least once in every five-year period. This valuation was prepared on the basis of assumptions that were recommended to and adopted by the Board based on the 2021 Assumption Review, which covered the period from July 1, 2015, to June 30, 2020. These assumptions will remain in effect for valuation purposes until such time as the Board adopts revised assumptions.

### Interest Rate and Expenses

The valuation interest assumption is 7.25% per annum, with no loading for plan expenses.

### Salary Scale

In accordance with West Virginia Senate Bill 597, salary is assumed to increase by 5.00% effective July 1, 2021 and 4.76% effective on July 1, 2022. Salary is assumed to increase 4.25% annually thereafter. The most recent pay increase prior to July 1, 2021, occurred on July 1, 2011.

### Automatic Cost-of-Living Increases to Pensions

Pensions for judges appointed or elected prior to July 2, 2005 are assumed to increase at the same time as active salaries increase, and by the same percentage.

### Pre-Retirement Mortality

No pre-retirement mortality is assumed due to the small number of active members.

### Post-Retirement Mortality

Post-retirement mortality tables are as follows:

|                     |  |
|---------------------|--|
| Healthy Male:       | 100% of Pub-2010 General Retiree Male Table, above-median, amount-weighted, projected generationally with Scale MP-2020.       |
| Healthy Female:     | 100% of Pub-2010 General Retiree Female Table, above-median, amount-weighted, projected generationally with Scale MP-2020.     |
| Disabled Male:      | 100% of Pub-2010 General/Teacher Disabled Male Table, amount-weighted, projected generationally with Scale MP-2020.            |
| Disabled Female:    | 100% of Pub-2010 General/Teacher Disabled Female Table, amount-weighted, projected generationally with Scale MP-2020.          |
| Beneficiary Male:   | 100% of Pub-2010 Contingent Survivor Male Table, above-median, amount-weighted, projected generationally with Scale MP-2020.   |
| Beneficiary Female: | 100% of Pub-2010 Contingent Survivor Female Table, above-median, amount-weighted, projected generationally with Scale MP-2020. |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*Judges' Retirement System*

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**Withdrawal from Service**

No withdrawal is assumed due to the small number of active members.

**Retirement Rates and Service**

For those eligible to retire prior to age 65, 5% are assumed to retire each year through age 64 with 100% retiring at age 65. For those first eligible at age 65 or later, 100% are assumed to retire when they become eligible.

**Disability**

No disablement is assumed due to the small number of active members.

**Transfers from PERS**

It is assumed that all judges in PERS who earn sufficient service to vest under JRS will join JRS. Liabilities for potential transfers from PERS are included in this valuation and are calculated as if the judge had always been a member of JRS. Accumulated member contributions under PERS are treated as an offset to plan liabilities for valuation purposes. The shortfall of PERS accumulated member contributions versus the amount they would have contributed under the plan had they always been a participant under JRS is recognized in the development of the normal cost.

**Family Composition**

All judges are assumed to be married. Where spousal data is not available, it is assumed that male judges are five years older than their spouses and female judges are five years younger than their spouses. Surviving children's benefits were not explicitly valued.

**Asset Valuation Method**

Assets for valuation purposes are included at Market Value.

**Plan Contributions**

Plan contributions, both employee and employer, are assumed to be paid in the middle of the year.

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
**Judges' Retirement System**

**Schedule of Active Member Valuation Data**

| Valuation Date | Number | Annual Payroll | Annual Average Pay | % Change in Average Pay | Number of Employers |
|----------------|--------|----------------|--------------------|-------------------------|---------------------|
| 6/30/2022      | 81     | \$ 11,289,000  | \$ 139,370         | 10.0%                   | 1                   |
| 6/30/2021      | 79     | 10,504,000     | 132,962            | 5.0%                    | 1                   |
| 6/30/2020      | 77     | 9,752,000      | 126,649            | 0.0%                    | 1                   |
| 6/30/2019      | 77     | 9,752,000      | 126,649            | 0.0%                    | 1                   |
| 6/30/2018      | 74     | 9,374,000      | 126,676            | 0.0%                    | 1                   |
| 6/30/2017      | 75     | 9,500,000      | 126,667            | 0.0%                    | 1                   |
| 6/30/2016      | 72     | 9,122,000      | 126,694            | 0.0%                    | 1                   |
| 6/30/2015      | 70     | 8,870,000      | 126,714            | 0.0%                    | 1                   |
| 6/30/2014      | 73     | 9,248,000      | 126,685            | 0.0%                    | 1                   |
| 6/30/2013      | 70     | 8,870,000      | 126,714            | 0.1%                    | 1                   |

**Schedule of Funding Progress (in thousands)**

| Valuation Date | Actuarial Value of Assets (a) | Actuarial Liability (AAL) Entry Age (b) | Unfunded AAL (UAAL) (b-a) | Funded Ratio (a/b) | Covered Payroll (c) | UAAL as a % of Covered Payroll ((b-a)/c) |
|----------------|-------------------------------|---|---------------------------|--------------------|---------------------|--|
| 7/1/2022       | \$ 259,242                    | \$ 108,251                              | \$ (150,991)              | 239.5%             | \$ 11,289           | -1337.5%                                 |
| 7/1/2021       | 280,660                       | 106,682                                 | (173,978)                 | 263.1%             | 10,504              | -1656.3%                                 |
| 7/1/2020       | 215,688                       | 98,800                                  | (116,888)                 | 218.3%             | 9,752               | -1198.6%                                 |
| 7/1/2019       | 212,653                       | 110,476                                 | (102,177)                 | 192.5%             | 9,752               | -1047.8%                                 |
| 7/1/2018       | 204,488                       | 110,215                                 | (94,273)                  | 185.5%             | 9,374               | -1005.7%                                 |
| 7/1/2017       | 189,956                       | 108,932                                 | (81,024)                  | 174.4%             | 9,500               | -852.9%                                  |
| 7/1/2016       | 167,194                       | 107,774                                 | (59,420)                  | 155.1%             | 9,122               | -651.4%                                  |
| 7/1/2015       | 170,152                       | 107,125                                 | (63,027)                  | 158.8%             | 8,870               | -710.6%                                  |
| 7/1/2014       | 165,239                       | 106,029                                 | (59,210)                  | 155.8%             | 9,248               | -640.2%                                  |
| 7/1/2013       | 141,476                       | 105,739                                 | (35,737)                  | 133.8%             | 8,870               | -402.9%                                  |

**Solvency Test**

| Valuation Date | (1) Active Member Contributions | (2) Retirees, and Beneficiaries | (3) Active Members Terms, (Employer Financed Portion) | Valuation of Assets | % of Accrued Liabilities Covered by Valuation Assets |        |        |
|----------------|---------------------------------|---------------------------------|---|---------------------|--|--------|--------|
|                |                                 |                                 |   |                     | (1)  | (2)    | (3)    |
| 6/30/2022      | \$ 5,155,301                    | \$ 64,789,000                   | \$ 38,306,699   | \$ 259,242,000      | 100.0%   | 100.0% | 394.2% |
| 6/30/2021      | 5,194,918                       | 64,581,000                      | 36,906,082  | 280,660,000         | 100.0%   | 100.0% | 571.4% |
| 6/30/2020      | 5,174,080                       | 60,657,000                      | 32,968,920  | 215,688,000         | 100.0%   | 100.0% | 454.5% |
| 6/30/2019      | 5,108,621                       | 68,734,000                      | 36,633,379  | 212,653,000         | 100.0%   | 100.0% | 378.9% |
| 6/30/2018      | 6,302,978                       | 62,968,000                      | 40,944,022  | 204,488,000         | 100.0%   | 100.0% | 330.3% |
| 6/30/2017      | 6,526,575                       | 61,650,000                      | 40,755,425  | 189,956,000         | 100.0%   | 100.0% | 298.8% |
| 6/30/2016      | 7,481,777                       | 53,847,000                      | 46,445,223  | 167,194,000         | 100.0%   | 100.0% | 227.9% |
| 6/30/2015      | 7,485,928                       | 53,805,000                      | 45,834,072  | 170,152,000         | 100.0%   | 100.0% | 237.5% |
| 6/30/2014      | 8,157,052                       | 49,709,000                      | 48,162,948  | 165,239,000         | 100.0%   | 100.0% | 222.9% |
| 6/30/2013      | 7,823,170                       | 52,408,000                      | 45,507,830  | 141,476,000         | 100.0%   | 100.0% | 178.5% |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*Judges' Retirement System*

**Schedule of Retirees and Beneficiaries Added and Removed**

| Fiscal Year Ended | Added  |                   | Removed |                   | Year End |                   | % Increase in Annual Allowances | Average Annual Allowances |
|-------------------|--------|-------------------|---------|-------------------|----------|-------------------|---------------------------------|---------------------------|
|                   | Number | Annual Allowances | Number  | Annual Allowances | Number   | Annual Allowances |                                 |                           |
| 2022              | 1      | \$ 456,373        | (3)     | \$ 218,389        | 57       | \$ 5,045,872      | 4.9%                            | \$ 88,524                 |
| 2021              | 1      | 41,225            | (3)     | 130,167           | 59       | 4,807,888         | -1.8%                           | 81,490                    |
| 2020              | 3      | 114,975           | (3)     | 61,567            | 61       | 4,896,830         | 1.1%                            | 80,276                    |
| 2019              | 4      | 157,012           | (1)     | 78,120            | 61       | 4,843,422         | 1.7%                            | 79,400                    |
| 2018              | 6      | 378,000           | (5)     | 123,777           | 58       | 4,764,530         | 5.6%                            | 82,147                    |
| 2017              | 7      | 568,043           | (4)     | 439,783           | 57       | 4,510,307         | 2.9%                            | 79,128                    |
| 2016              | -      | -                 | (1)     | 72,573            | 54       | 4,382,047         | -0.4%                           | 81,149                    |
| 2015              | 2      | 201,600           | -       | -                 | 55       | 4,397,505         | 4.8%                            | 79,955                    |
| 2014              | -      | -                 | (4)     | 289,800           | 53       | 4,195,905         | -6.0%                           | 79,168                    |
| 2013              | 2      | 189,000           | -       | -                 | 57       | 4,461,705         | 4.4%                            | 78,276                    |

**Changes in Unfunded Actuarial Liability**

|   |                         |
|---|-------------------------|
| Funded in excess of Actuarial Liability, June 30, 2021        | \$ (173,978,000)        |
| Interest  | (12,470,000)            |
| Normal cost   | 2,651,000               |
| Contributions   | (1,371,000)             |
| Assumption changes  | -                       |
| Liability (Gain)/Loss   | (3,783,000)             |
| Actuarial Asset (Gain)/Loss                                   | 37,960,000              |
| <b>Funded in excess of Actuarial Liability, June 30, 2022</b> | <b>\$ (150,991,000)</b> |

**Schedule of Contributions**

The Schedule of Contributions is included in the Required Supplementary Information provided in the Financial Section of this Annual Comprehensive Financial Report.

**Plan Provisions**

A discussion of plan provisions is included in Note 2 to the financial statements included in the Financial Section.



## Consolidated Public Retirement Board

601 57<sup>th</sup> Street SE, Suite 5  
Charleston, West Virginia 25304  
Telephone: 304-558-3570 or 800-654-4406  
Fax: 304-957-7522  
Email: [cprb@wv.gov](mailto:cprb@wv.gov)  
[www.wvretirement.com](http://www.wvretirement.com)



**EXECUTIVE DIRECTOR**  
Jeffrey E. Fleck

**BOARD CHAIRMAN**  
Joseph G. Bunn

December 18, 2023

West Virginia Consolidated Public Retirement Board  
West Virginia Emergency Medical Services Retirement System 601  
57th Street SE, Suite 5  
Charleston, WV 25304

Dear Board Members:

We performed the annual actuarial valuation of the West Virginia Emergency Medical Services Retirement System (EMSRS) as of July 1, 2022. The purpose of the actuarial valuation is to determine the actuarial liabilities of the System for funding purposes and to determine whether expected contributions will be sufficient to fulfill the System’s long-term funding policy.

The valuation was based on membership data as of June 30, 2022, maintained by the West Virginia Consolidated Public Retirement Board, and financial information received from the West Virginia Investment Management Board. Census and financial data were not audited by the West Virginia Consolidated Public Retirement Board but were reviewed for consistency. The accuracy of the results of the valuation is dependent on the accuracy of the data.

The tables presented for EMSRS in the actuarial section of this Annual Comprehensive Financial Report are based on information contained in our July 1, 2022, valuation report dated April 2023. These tables include:

### Actuarial Section

- Summary of Actuarial Methods and Assumptions
- Schedule of Active Member Valuation Data
- Schedule of Funding Progress
- Solvency Test
- Schedule of Retirees and Beneficiaries Added and Removed
- Changes in Unfunded Actuarial Liability

### Financial Section

- Schedules of Contributions

All schedules in the Actuarial Section above were completed by the West Virginia Consolidated Public Retirement Board. The CPRB has reviewed these schedules for accuracy and consistency with the information provided in our July 1, 2022, valuation report.

This report presents fairly the actuarial position of EMSRS as of July 1, 2022, in accordance with

Actuarial Standards of Practice (ASOP) applied on a basis consistent with that of the preceding valuation. In my opinion, the assumptions used in preparing the liabilities and costs are individually reasonable with respect to EMSRS experience and represent my best estimate of anticipated future experience of EMSRS. The assumptions were developed in accordance with the guidance set forth in applicable Actuarial Standards of Practice, including ASOPs 27 and 35. In particular, the mortality assumptions were developed in accordance with the recommendation that an appropriate margin for future improvement in mortality beyond the measurement date be included.

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

Where presented, the “funded ratio” and “unfunded accrued liability” are typically measured using the actuarial value of assets. It should be noted that use of the market value of assets would not result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratios presented are appropriate for evaluating the need and level of future contributions but make no assessment of the funded status of the plan if it were to settle (i.e., purchase annuities to cover) a portion or all of its liabilities.

Actuarial Standard of Practice No. 56 (“ASOP 56”) provides guidance to actuaries when performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. The CPRB uses the following:

- third-party software to calculate the liabilities associated with the provisions of the plan using data, assumptions and funding methods as specified in our report.
- an internally developed model that applies applicable funding methods and policies to the liabilities derived from the output of the third-party software and other inputs, such as plan assets and contributions, to generate the exhibits found in our report.

The CPRB has an extensive review process whereby the results of the liability calculations are checked using detailed sample output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other outputs and the internal model are similarly reviewed in detail and at a high level for accuracy, reasonability and consistency with prior results. The CPRB also reviews the third-party model when significant changes are made to the software or model. The review is performed by the CPRB Board Actuary who is familiar with applicable funding methods as well as the manner in which the model generates its output.

The results presented herewith were prepared solely by the West Virginia Consolidated Public Retirement Board for the purposes herein stated and may not be appropriate to use for other purposes. Use of this report for any other purposes or by anyone other than the West Virginia Consolidated Public Retirement Board and its auditors may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. No one may make any representations or warranties based on any statements or conclusions contained in this report without prior written consent of the CPRB Board Actuary.

I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions about it.

Respectfully,

Kenneth M. Woodson Jr.

Kenneth M. Woodson Jr., FSA, MAAA, Ph.D.

CPRB Board Actuary





**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*Emergency Medical Services Retirement System*

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**SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS**

**Valuation Date:** July 1, 2022

**Funding Method and Basis of Assumptions**

The valuation is prepared under the Entry Age Cost Method with individually computed accrued liabilities. The Normal Cost is computed in aggregate.

Experience studies are performed at least once in every five-year period. This valuation was prepared on the basis of assumptions that were recommended to and adopted by the Board based on an experience study covering the period from July 1, 2015, to June 30, 2020. These assumptions will remain in effect for valuation purposes until such time as the Board adopts revised assumptions.

**Interest Return and Expenses**

The interest rate assumption is a net return rate of 7.25% annually, net of investment and administrative expenses.

**Pre-Retirement Mortality**

100% of Pub-2010 Safety Employee Mortality Tables, median, amount-weighted, projected generationally with Scale MP-2020.

**Post-Retirement Mortality**

Post-retirement mortality tables are as follows:

- Healthy Male: 98% of Pub-2010 Safety Retiree Male Mortality Tables, median, amount-weighted, projected generationally with Scale MP-2020.
- Healthy Female: 99% of Pub-2010 Safety Retiree Female Mortality Tables, median, amount-weighted, projected generationally with Scale MP-2020.
- Disabled Male: 124% of Pub-2010 Safety Disabled Male Mortality Tables, amount-weighted, projected generationally with Scale MP-2020.
- Disabled Female: 100% of Pub-2010 Safety Disabled Female Mortality Tables, amount-weighted, projected generationally with Scale MP-2020.
- Beneficiary Male: 111% of Pub-2010 Contingent Survivor Male Table, median, amount-weighted, projected generationally with Scale MP-2020.
- Beneficiary Female: 109% of Pub-2010 Contingent Survivor Female Table, median, amount-weighted, projected generationally with Scale MP-2020.

**Salary Scale**

Annual salary increases are assumed by age on a unisex basis. Sample annual salary increases are as follows:

| Age      | Rate  |
|----------|-------|
| Under 31 | 5.00% |
| 40       | 4.25% |
| 50       | 3.75% |
| 60       | 3.25% |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
***Emergency Medical Services Retirement System***

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**Withdrawal Rates**

Withdrawal rates predict termination of employment prior to unreduced retirement eligibility. A sample of unisex rates by age are:

| Age | Rate of Withdrawal |
|-----|--------------------|
| 30  | 0.1960             |
| 40  | 0.1320             |
| 50  | 0.0800             |
| 55  | 0.0000             |

**Disability Rates**

Disability rates predict an active member becoming disabled prior to unreduced retirement eligibility. A sample of disability rates by age are:

| Age | Rate of Disablement |
|-----|---------------------|
| 30  | 0.0012              |
| 40  | 0.0031              |
| 50+ | 0.0040              |

It is assumed that members eligible for unreduced retirement will elect retirement prior to becoming disabled. It is also assumed that retired members will not become disabled following retirement due to duty related causes incurred prior to retirement.

Disability retirement benefits vary by duty and non-duty causes. Disability retirements are assumed to occur in the following percentages:

|                         |     |
|-------------------------|-----|
| Duty Related Disability | 50% |
| Non-Duty Disability     | 50% |

**Family Composition**

In determining the value of pre-retirement spousal death benefits, it is assumed that 80% of all members will be married at death. Males are assumed to be three years older than their female spouse. Remarriage rates are not considered, and no dependent children are assumed.

**Accrual of Future Service**

EMSRS employment is considered a full-time professional position. All active members are assumed to complete sufficient hours to accrue one year of service in each future year of employment.

**Non-Contributory Service Credits for Military Service and Unused Leave at Retirement**

At retirement, male members are assumed to be credited with one additional year of service for benefits due to allowable military service, plus one additional year for unused annual leave and/or sick leave for a total of two additional years. Female members are assumed to be credited with one additional year of service, which is solely attributed to unused annual leave and/or sick leave.

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
***Emergency Medical Services Retirement System***

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**Retirement Rates**

Members who are eligible for unreduced retirement benefits are assumed to have a 25% probability of retiring each year prior to age 65. On or after age 65, 100% of remaining members are assumed to retire.

Members who first become eligible for unreduced retirement benefits on or after the attainment of age 65 are assumed to retire in the year they first become eligible.

**Asset Valuation Method**

Assets for valuation purposes are included at Market Value.

**Plan Contributions**

Member and employer contributions are calculated as a percentage of total members' payroll. For interest calculation purposes, all amounts are treated as being deposited on an average of halfway through the Plan year.

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
***Emergency Medical Services Retirement System***

**Schedule of Active Member Valuation Data**

| Valuation Date | Number | Annual Payroll | Annual Average Pay | % Change in Average Pay | Number of Employers |
|----------------|--------|----------------|--------------------|-------------------------|---------------------|
| 6/30/2022      | 637    | \$ 33,642,000  | \$ 52,813          | -1.1%                   | 23                  |
| 6/30/2021      | 638    | 34,071,000     | 53,403             | 11.0%                   | 17                  |
| 6/30/2020      | 611    | 29,395,000     | 48,110             | 6.4%                    | 15                  |
| 6/30/2019      | 587    | 26,536,000     | 45,206             | 0.2%                    | 15                  |
| 6/30/2018      | 577    | 26,024,000     | 45,102             | 1.6%                    | 15                  |
| 6/30/2017      | 608    | 27,001,000     | 44,410             | -3.6%                   | 14                  |
| 6/30/2016      | 586    | 26,992,000     | 46,061             | 0.8%                    | 14                  |
| 6/30/2015      | 568    | 25,963,000     | 45,710             | 3.4%                    | 14                  |
| 6/30/2014      | 546    | 24,145,000     | 44,222             | 2.6%                    | 14                  |
| 6/30/2013      | 523    | 22,548,000     | 43,113             | 20.0%                   | 13                  |

**Schedule of Funding Progress (in thousands)**

| Valuation Date | Actuarial Accrued             |                               | Unfunded AAL (UAAL) | Funded Ratio (a/b) | Covered Payroll (c) | UAAL as a % of Covered Payroll ((b-a)/c) |
|----------------|-------------------------------|-------------------------------|---------------------|--------------------|---------------------|--|
|                | Actuarial Value of Assets (a) | Liability (AAL) Entry Age (b) |                     |                    |                     |  |
| 7/1/2022       | \$ 112,961                    | \$ 109,968                    | \$ (2,993)          | 102.7%             | \$ 33,642           | -8.9%                                    |
| 7/1/2021       | 119,221                       | 105,663                       | (13,558)            | 112.8%             | 34,071              | -39.8%                                   |
| 7/1/2020       | 89,005                        | 90,691                        | 1,686               | 98.1%              | 29,395              | 5.7%                                     |
| 7/1/2019       | 84,969                        | 82,582                        | (2,387)             | 102.9%             | 26,536              | -9.0%                                    |
| 7/1/2018       | 79,302                        | 75,574                        | (3,728)             | 104.9%             | 26,024              | -14.3%                                   |
| 7/1/2017       | 71,165                        | 71,590                        | 425                 | 99.4%              | 27,001              | 1.6%                                     |
| 7/1/2016       | 58,868                        | 67,053                        | 8,185               | 87.8%              | 26,992              | 30.3%                                    |
| 7/1/2015       | 56,938                        | 60,287                        | 3,349               | 94.4%              | 25,963              | 12.9%                                    |
| 7/1/2014       | 53,647                        | 56,459                        | 2,812               | 95.0%              | 24,145              | 11.6%                                    |
| 7/1/2013       | 42,903                        | 50,950                        | 8,047               | 84.2%              | 22,548              | 35.7%                                    |

**Solvency Test**

| Valuation Date | Active Members                  |  |                                 | Valuation of Assets | % of Accrued Liabilities Covered by Valuation Assets |        |        |
|----------------|---------------------------------|--|---------------------------------|---------------------|--|--------|--------|
|                | (1) Active Member Contributions | (2) Terms. Retirees. and Beneficiaries | (3) (Employer Financed Portion) |                     | (1)  | (2)    | (3)    |
| 6/30/2022      | \$ 18,354,740                   | \$ 57,792,000                          | \$ 33,821,260                   | \$112,961,000       | 100.0%   | 100.0% | 108.9% |
| 6/30/2021      | 18,804,340                      | 48,636,000                             | 38,222,660                      | 119,221,000         | 100.0%   | 100.0% | 135.5% |
| 6/30/2020      | 17,732,945                      | 43,090,000                             | 29,868,055                      | 89,005,000          | 100.0%   | 100.0% | 94.4%  |
| 6/30/2019      | 16,631,777                      | 38,276,000                             | 27,674,223                      | 84,969,000          | 100.0%   | 100.0% | 108.6% |
| 6/30/2018      | 16,378,993                      | 32,802,000                             | 26,393,007                      | 79,302,000          | 100.0%   | 100.0% | 114.1% |
| 6/30/2017      | 15,405,406                      | 29,942,000                             | 26,242,594                      | 71,165,000          | 100.0%   | 100.0% | 98.4%  |
| 6/30/2016      | 14,137,547                      | 26,599,000                             | 26,316,453                      | 58,868,000          | 100.0%   | 100.0% | 68.9%  |
| 6/30/2015      | 13,099,832                      | 22,687,000                             | 24,500,168                      | 56,938,000          | 100.0%   | 100.0% | 86.3%  |
| 6/30/2014      | 12,317,472                      | 19,879,000                             | 24,262,528                      | 53,647,000          | 100.0%   | 100.0% | 88.4%  |
| 6/30/2013      | 11,173,226                      | 15,401,000                             | 24,375,774                      | 42,903,000          | 100.0%   | 100.0% | 67.0%  |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*Emergency Medical Services Retirement System*

**Schedule of Retirees and Beneficiaries Added and Removed**

| Fiscal Year<br>Ended | Added  |                      | Removed |                      | Year End |                      | % Increase in<br>Annual<br>Allowances | Average<br>Annual<br>Allowances |
|----------------------|--------|----------------------|---------|----------------------|----------|----------------------|---------------------------------------|---------------------------------|
|                      | Number | Annual<br>Allowances | Number  | Annual<br>Allowances | Number   | Annual<br>Allowances |                                       |                                 |
| 2021                 | 20     | \$ 446,697           | (4)     | \$ 12,352            | 154      | \$ 4,186,137         | 11.6%                                 | \$ 27,183                       |
| 2021                 | 15     | 463,769              | (7)     | 59,566               | 138      | 3,751,792            | 12.1%                                 | 27,187                          |
| 2020                 | 11     | 373,902              | (1)     | 16,113               | 130      | 3,347,589            | 12.0%                                 | 25,751                          |
| 2019                 | 18     | 409,076              | -       | -                    | 120      | 2,989,800            | 15.9%                                 | 24,915                          |
| 2018                 | 13     | 379,419              | -       | -                    | 102      | 2,580,724            | 17.2%                                 | 25,301                          |
| 2017                 | 9      | 128,661              | (1)     | 24,392               | 89       | 2,201,305            | 5.0%                                  | 24,734                          |
| 2016                 | 10     | 265,750              | -       | -                    | 81       | 2,097,036            | 16.1%                                 | 25,889                          |
| 2015                 | 15     | 394,335              | -       | -                    | 71       | 1,805,868            | 24.6%                                 | 25,435                          |
| 2014                 | 11     | 255,922              | -       | -                    | 56       | 1,449,168            | 23.4%                                 | 25,878                          |
| 2013                 | 11     | 304,129              | -       | -                    | 45       | 1,174,004            | 43.3%                                 | 26,089                          |

**Changes in Unfunded Actuarial Liability**

|  |                 |
|--|-----------------|
| Funded in Excess of Actuarial Liability, June 30, 2021 | \$ (13,558,000) |
| Interest   | (915,000)       |
| Normal cost  | 4,157,000       |
| Contributions  | (6,534,000)     |
| Assumption changes                                     | -               |
| Liability (Gain)/Loss                                  | (2,558,000)     |
| Actuarial Asset (Gain)/Loss                            | 16,415,000      |
| Funded in excess of Actuarial Liability, June 30, 2022 | \$ (2,993,000)  |

**Schedule of Contributions**

The Schedule of Contributions is included in the Required Supplementary Information provided in the Financial Section of this Annual Comprehensive Financial Report.

**Plan Provisions**

A discussion of plan provisions is included in Note 2 to the financial statements included in the Financial Section.





**EXECUTIVE DIRECTOR**

Jeffrey E. Fleck

## Consolidated Public Retirement Board

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**BOARD CHAIRMAN**

Joseph G. Bunn

December 18, 2023

West Virginia Consolidated Public Retirement Board  
West Virginia Municipal Police Officers and Firefighters Retirement System  
601 57<sup>th</sup> Street SE, Suite 5  
Charleston, WV 25304

Dear Board Members:

We performed the annual actuarial valuation of the West Virginia Municipal Police Officers and Firefighters Retirement System (MPFRS) as of July 1, 2022. The purpose of the actuarial valuation is to determine the actuarial liabilities of the System for funding purposes and to determine whether expected contributions will be sufficient to fulfill the System's long-term funding policy.

The valuation was based on membership data as of June 30, 2022, maintained by the West Virginia Consolidated Public Retirement Board, and financial information received from the West Virginia Investment Management Board. Census and financial data were not audited by the West Virginia Consolidated Public Retirement Board but were reviewed for consistency. The accuracy of the results of the valuation is dependent on the accuracy of the data.

The tables presented for MPFRS in the actuarial section of this Annual Comprehensive Financial Report are based on information contained in our July 1, 2022, valuation report dated April 2023. These tables include:

### Actuarial Section

- Summary of Actuarial Methods and Assumptions
- Schedule of Active Member Valuation Data
- Schedule of Funding Progress
- Solvency Test
- Schedule of Retirees and Beneficiaries Added and Removed
- Changes in Unfunded Actuarial Liability

### Financial Section

- Schedules of Contributions

All schedules in the Actuarial Section above were completed by the West Virginia Consolidated Public Retirement Board. The CPRB has reviewed these schedules for accuracy and consistency with the information provided in our July 1, 2022, valuation report.

This report presents fairly the actuarial position of MPFRS as of July 1, 2022, in accordance with Actuarial Standards of Practice (ASOP) applied on a basis consistent with that of the preceding valuation. In my opinion, the assumptions used in preparing the liabilities and costs are individually reasonable with respect to MPFRS experience and represent my best estimate of anticipated future experience of MPFRS. The assumptions were developed in accordance with the guidance set forth in applicable Actuarial Standards of Practice, including ASOPs 27 and 35. In particular, the mortality assumptions were developed in accordance with the recommendation that an appropriate margin for future improvement in mortality beyond the measurement date be included.

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

Where presented, the “funded ratio” and “unfunded accrued liability” are typically measured using the actuarial value of assets. It should be noted that use of the market value of assets would not result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratios presented are appropriate for evaluating the need and level of future contributions but make no assessment of the funded status of the plan if it were to settle (i.e., purchase annuities to cover) a portion or all of its liabilities.

Actuarial Standard of Practice No. 56 (“ASOP 56”) provides guidance to actuaries when performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. The CPRB uses the following:

- third-party software to calculate the liabilities associated with the provisions of the plan using data, assumptions and funding methods as specified in our report.
- an internally developed model that applies applicable funding methods and policies to the liabilities derived from the output of the third-party software and other inputs, such as plan assets and contributions, to generate the exhibits found in our report.

The CPRB has an extensive review process whereby the results of the liability calculations are checked using detailed sample output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other outputs and the internal model are similarly reviewed in detail and at a high level for accuracy, reasonability and consistency with prior results. The CPRB also reviews the third-party model when significant changes are made to the software or model. The review is performed by the CPRB Board Actuary who is familiar with applicable funding methods as well as the manner in which the model generates its output.

The results presented herewith were prepared solely by the West Virginia Consolidated Public Retirement Board for the purposes herein stated and may not be appropriate to use for other purposes. Use of this report for any other purposes or by anyone other than the West Virginia Consolidated Public Retirement Board and its auditors may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. No one may make any representations or warranties based on any statements or conclusions contained in this report without prior written consent of the CPRB Board Actuary.



I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions about it.

Respectfully,

Kenneth M. Woodson Jr.

Kenneth M. Woodson Jr., FSA, MAAA, Ph.D.  
CPRB Board Actuary



**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
***Municipal Police Officers and Firefighters Retirement System***

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**SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS**

**Valuation Date:** July 1, 2022

**Funding Method and Basis of Assumptions**

The valuation is prepared under the Entry Age Cost Method with individually computed accrued liabilities. The Normal Cost is computed in aggregate.

Experience studies are performed at least once in every five-year period. This valuation was prepared on the basis of assumptions that were recommended to and adopted by the Board based on an experience study covering the period from July 1, 2015, to June 30, 2020. These assumptions will remain in effect for valuation purposes until such time as the Board adopts revised assumptions.

**Interest Return and Expenses**

The interest rate assumption is a net return rate of 7.25% annually, net of investment and administrative expenses.

**Pre-Retirement Mortality**

100% of Pub-2010 Safety Employee Mortality Tables, median, amount-weighted, projected generationally with Scale MP-2020.

**Post-Retirement Mortality**

Post-retirement mortality tables are as follows:

- Healthy Male: 98% of Pub-2010 Safety Retiree Male Mortality Table, median, amount-weighted, projected generationally with Scale MP-2020.
- Healthy Female: 99% of Pub-2010 Safety Retiree Female Mortality Table, median, amount-weighted, projected generationally with Scale MP-2020.
- Disabled Male: 124% of Pub-2010 Safety Disabled Male Mortality Tables, amount-weighted, projected generationally with Scale MP-2020.
- Disabled Female: 100% of Pub-2010 Safety Disabled Female Mortality Tables, amount-weighted, projected generationally with Scale MP-2020.
- Beneficiary Male: 111% of Pub-2010 Contingent Survivor Male Table, median, amount-weighted, projected generationally with Scale MP-2020.
- Beneficiary Female: 109% of Pub-2010 Contingent Survivor Female Table, median, amount-weighted, projected generationally with Scale MP-2020.

**Salary Scale**

Annual salary increases are assumed by age on a unisex basis with sample annual salary increases as follows:

| Age      | Rate  |
|----------|-------|
| Under 31 | 4.75% |
| 40       | 4.00% |
| 50       | 3.75% |
| 60       | 3.50% |
| 65       | 3.25% |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
***Municipal Police Officers and Firefighters Retirement System***

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**Withdrawal Rates**

Withdrawal rates predict termination of employment prior to unreduced retirement eligibility. A sample of unisex rates by age are:

| Age | Rate of Withdrawal |
|-----|--------------------|
| 30  | 0.1425             |
| 40  | 0.0768             |
| 50  | 0.0400             |
| 55  | 0.0000             |

**Disability Rates**

Disability rates predict an active member becoming disabled prior to unreduced retirement eligibility. A sample of disability rates by age are:

| Age | Rate of Disablement |
|-----|---------------------|
| 30  | 0.0012              |
| 40  | 0.0031              |
| 50+ | 0.0040              |

It is assumed that members eligible for unreduced retirement will elect retirement prior to becoming disabled. It is also assumed that retired members will not become disabled following retirement due to duty related causes incurred prior to retirement.

Disability retirement benefits vary by duty and non-duty causes. Disability retirements are assumed to occur in the following percentages:

|                         |     |
|-------------------------|-----|
| Duty Related Disability | 75% |
| Non-Duty Disability     | 25% |

**Family Composition**

In determining the value of pre-retirement spousal death benefits, it is assumed that 90% of all members will be married at death. Males are assumed to be three years older than their female spouse.

**Accrual of Future Service**

MPFRS employment is considered a full-time professional position. All active members are assumed to complete sufficient hours to accrue one year of service in each future year of employment.

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
***Municipal Police Officers and Firefighters Retirement System***

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**Non-Contributory Service Credits for Military Service**

At Normal retirement, male members are assumed to be credited with one additional service credit year for benefits, which is solely attributed to allowable military service additional retirement service credits. Female members are assumed to have no additional years of service credits.

**Retirement Rates**

Members who become eligible for unreduced retirement benefits are assumed to have 25% probability of retiring each year prior to age 65. On or after age 65, 100% of members are assumed to retire.

**Asset Valuation Method**

Assets for valuation purposes are included at Market Value.

**Plan Contributions**

Member and employer contributions are calculated as a percentage of total members' payroll. Amounts are deposited to the Trust Fund on a monthly basis. For interest calculation purposes, all amounts are treated as being deposited on an average of half-way through the Plan year.

**Plan Provisions**

During the 2022 West Virginia Second Special Legislative Session, HB 216 became law and changed the benefit multiplier as outlined below:

**Prior Benefit Multiplier**

- 2.60% of Average Compensation for each of the first 20 years of service credit, plus
- 2.00% of Average Compensation for years 21 through 25, plus
- 1.00% of Average Compensation for years 26 through 30.
- Maximum benefit of 67% Average Compensation

**New Benefit Multiplier**

- 2.75% of Average Compensation for each of the first 20 years of service credit, plus
- 2.00% of Average Compensation for years 21 through 25, plus
- 1.50% of Average Compensation for years after 25.
- Maximum benefit of 90% Average Compensation

Changes to the benefit multiplier apply to all years of service for active members of MPFRS.

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
***Municipal Police Officers and Firefighters Retirement System***

**Schedule of Active Member Valuation Data**

| Valuation Date | Number | Annual Payroll | Annual Average Pay | % Change in Average Pay | Number of Employers |
|----------------|--------|----------------|--------------------|-------------------------|---------------------|
| 6/30/2022      | 602    | \$ 34,242,000  | \$ 56,880          | 6.7%                    | 37                  |
| 6/30/2021      | 540    | 28,785,000     | 53,306             | 5.8%                    | 37                  |
| 6/30/2020      | 436    | 21,972,000     | 50,394             | 4.6%                    | 37                  |
| 6/30/2019      | 370    | 17,831,000     | 48,192             | 5.7%                    | 32                  |
| 6/30/2018      | 332    | 15,132,000     | 45,578             | -2.4%                   | 30                  |
| 6/30/2017      | 217    | 10,136,000     | 46,710             | 13.0%                   | 21                  |
| 6/30/2016      | 191    | 7,898,000      | 41,351             | 5.6%                    | 16                  |
| 6/30/2015      | 140    | 5,483,000      | 39,164             | 0.4%                    | 16                  |
| 6/30/2014      | 97     | 3,784,000      | 39,010             | 2.2%                    | 11                  |
| 6/30/2013      | 48     | 1,833,000      | 38,188             | 6.7%                    | 9                   |

**Schedule of Funding Progress (in thousands)**

| Valuation Date | Actuarial Value of Assets |               | Actuarial Accrued Liability (AAL) |        | Unfunded AAL (UAAL) (b-a) | Funded Ratio (a/b) | Covered Payroll (c) | UAAL as a % of Covered Payroll ((b-a)/c) |
|----------------|---------------------------|---------------|-----------------------------------|--------|---------------------------|--------------------|---------------------|--|
|                | (a)                       | Entry Age (b) |                                   |        |                           |                    |                     |  |
| 7/1/2022       | \$ 27,197                 | \$ 19,419     | \$ (7,778)                        | 140.1% | 34,242                    | -22.7%             |                     |  |
| 7/1/2021       | 24,098                    | 13,376        | (10,722)                          | 180.2% | 28,785                    | -37.2%             |                     |  |
| 7/1/2020       | 14,889                    | 8,945         | (5,944)                           | 166.5% | 21,972                    | -27.1%             |                     |  |
| 7/1/2019       | 11,297                    | 6,365         | (4,932)                           | 177.5% | 17,831                    | -27.7%             |                     |  |
| 7/1/2018       | 8,077                     | 4,798         | (3,279)                           | 168.3% | 15,132                    | -21.7%             |                     |  |
| 7/1/2017       | 5,522                     | 2,957         | (2,565)                           | 186.7% | 10,136                    | -25.3%             |                     |  |
| 7/1/2016       | 3,082                     | 2,015         | (1,067)                           | 153.0% | 7,898                     | -13.5%             |                     |  |
| 7/1/2015       | 2,046                     | 1,116         | (930)                             | 183.3% | 5,483                     | -17.0%             |                     |  |
| 7/1/2014       | 1,201                     | 568           | (633)                             | 211.4% | 3,784                     | -16.7%             |                     |  |
| 7/1/2013       | 529                       | 264           | (265)                             | 200.4% | 1,833                     | -14.5%             |                     |  |

**Solvency Test**

| Valuation Date | (1) Active Member Contributions | (2) Terms, Retirees, and Beneficiaries | (3) Active Members (Employer Financed Portion) |               | % of Accrued Liabilities Covered by Valuation Assets |        |         |
|----------------|---------------------------------|--|--|---------------|--|--------|---------|
|                |                                 |  | Valuation of Assets                            |               | (1)  | (2)    | (3)     |
| 6/30/2022      | \$ 10,207,460                   | \$ 1,634,000                           | \$ 7,577,540                                   | \$ 27,197,000 | 100.0%   | 100.0% | 202.7%  |
| 6/30/2021      | 7,867,560                       | 1,304,000                              | 4,204,440                                      | 24,098,000    | 100.0%   | 100.0% | 355.0%  |
| 6/30/2020      | 5,952,221                       | 1,021,000                              | 1,971,779                                      | 14,889,000    | 100.0%   | 100.0% | 401.5%  |
| 6/30/2019      | 4,215,858                       | 981,000                                | 1,168,142                                      | 11,297,000    | 100.0%   | 100.0% | 522.2%  |
| 6/30/2018      | 3,159,458                       | 770,000                                | 868,542  | 8,077,000     | 100.0%   | 100.0% | 477.5%  |
| 6/30/2017      | 2,173,360                       | 283,000                                | 500,640  | 5,522,000     | 100.0%   | 100.0% | 612.3%  |
| 6/30/2016      | 1,484,433                       | 106,000                                | 424,567  | 3,082,000     | 100.0%   | 100.0% | 351.3%  |
| 6/30/2015      | 871,797                         | 61,000                                 | 183,203  | 2,046,000     | 100.0%   | 100.0% | 607.6%  |
| 6/30/2014      | 502,241                         | 35,000                                 | 30,759   | 1,201,000     | 100.0%   | 100.0% | 2157.9% |
| 6/30/2013      | 232,075                         | 19,000                                 | 12,925   | 529,000       | 100.0%   | 100.0% | 2150.3% |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
***Municipal Police Officers and Firefighters Retirement System***

| <b>Schedule of Retirees and Beneficiaries Added and Removed</b> |        |                   |         |                   |          |                   |                                 |                           |
|---|--------|-------------------|---------|-------------------|----------|-------------------|---------------------------------|---------------------------|
| Fiscal Year Ended   | Added  |                   | Removed |                   | Year End |                   | % Increase in Annual Allowances | Average Annual Allowances |
|   | Number | Annual Allowances | Number  | Annual Allowances | Number   | Annual Allowances |                                 |                           |
| 2022  | -      | -                 | -       | -                 | 1        | \$ 38,734         | 0.0%                            | \$ 38,734                 |
| 2021  | -      | -                 | -       | -                 | 1        | 38,734            | 0.0%                            | 38,734                    |
| 2020  | -      | -                 | -       | -                 | 1        | 38,734            | 0.0%                            | 38,734                    |
| 2019  | -      | 19,367            | -       | -                 | 1        | 38,734            | 100.0%                          | 38,734                    |
| 2018  | 1      | 19,367            | -       | -                 | 1        | 19,367            | 100.0%                          | 19,367                    |
| 2017  | -      | -                 | -       | -                 | -        | -                 | 0.0%                            | -                         |
| 2016  | -      | -                 | -       | -                 | -        | -                 | 0.0%                            | -                         |
| 2015  | -      | -                 | -       | -                 | -        | -                 | 0.0%                            | -                         |
| 2014  | -      | -                 | -       | -                 | -        | -                 | 0.0%                            | -                         |
| 2013  | -      | -                 | -       | -                 | -        | -                 | 0.0%                            | -                         |

| <b>Changes in Unfunded Actuarial Liability</b>                |                       |
|---|-----------------------|
| Funded in excess of Actuarial Liability, June 30, 2021        | \$ (10,722,000)       |
| Interest  | (720,000)             |
| Normal cost   | 3,414,000             |
| Contributions   | (5,345,000)           |
| Plan Changes  | 1,148,000             |
| Liability (Gain)/Loss   | 684,000               |
| Actuarial Asset (Gain)/Loss                                   | 3,763,000             |
| <b>Funded in excess of Actuarial Liability, June 30, 2022</b> | <b>\$ (7,778,000)</b> |

**Schedule of Contributions**

The Schedule of Contributions is included in the Required Supplementary Information provided in the Financial Section of this Annual Comprehensive Financial Report.

**Plan Provisions**

A discussion of plan provisions is included in Note 2 to the financial statements included in the Financial Section.







## Consolidated Public Retirement Board

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**EXECUTIVE DIRECTOR**  
Jeffrey E. Fleck

**BOARD CHAIRMAN**  
Joseph G. Bunn

December 18, 2023

West Virginia Consolidated Public Retirement Board  
West Virginia Natural Resources Police Officers Retirement System  
601 57th Street SE, Suite 5  
Charleston, WV 25304

Dear Board Members:

We performed the annual actuarial valuation of the West Virginia Natural Resources Police Officers Retirement System (NRPORS) as of July 1, 2022. The purpose of the actuarial valuation is to determine the actuarial liabilities of the System for funding purposes and to determine whether expected contributions will be sufficient to fulfill the System's long-term funding policy.

The valuation was based on membership data as of June 30, 2022, maintained by the West Virginia Consolidated Public Retirement Board, and financial information received from the West Virginia Investment Management Board. Census and financial data were not audited by the West Virginia Consolidated Public Retirement Board but were reviewed for consistency. The accuracy of the results of the valuation is dependent on the accuracy of the data.

The tables presented for NRPORS in the actuarial section of this Annual Comprehensive Financial Report are based on information contained in our July 1, 2022, valuation report dated April 2023. These tables include:

### Actuarial Section

- Summary of Actuarial Methods and Assumptions
- Schedule of Active Member Valuation Data
- Schedule of Funding Progress
- Solvency Test
- Schedule of Retirees and Beneficiaries Added and Removed
- Changes in Unfunded Actuarial Liability

### Financial Section

- Schedules of Contributions

All schedules in the Actuarial Section above were completed by the West Virginia Consolidated Public Retirement Board. The CPRB has reviewed these schedules for accuracy and consistency with the information provided in our July 1, 2022, valuation report.

This report presents fairly the actuarial position of NRPORS as of July 1, 2022, in accordance with Actuarial Standards of Practice (ASOP) applied on a basis consistent with that of the preceding valuation. In my opinion, the assumptions used in preparing the liabilities and costs are individually reasonable with respect to NRPORS experience and represent my best estimate of anticipated future experience of NRPORS. The assumptions were developed in accordance with the guidance set forth in applicable Actuarial Standards of Practice, including ASOPs 27 and 35. In particular, the mortality assumptions were developed in accordance with the recommendation that an appropriate margin for future improvement in mortality beyond the measurement date be included.

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

Where presented, the “funded ratio” and “unfunded accrued liability” are typically measured using the actuarial value of assets. It should be noted that use of the market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratios presented are appropriate for evaluating the need and level of future contributions but make no assessment of the funded status of the plan if it were to settle (i.e., purchase annuities to cover) a portion or all of its liabilities.

Actuarial Standard of Practice No. 56 (“ASOP 56”) provides guidance to actuaries when performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. The CPRB uses the following:

- third-party software to calculate the liabilities associated with the provisions of the plan using data, assumptions and funding methods as specified in our report.
- an internally developed model that applies applicable funding methods and policies to the liabilities derived from the output of the third-party software and other inputs, such as plan assets and contributions, to generate the exhibits found in our report.

The CPRB has an extensive review process whereby the results of the liability calculations are checked using detailed sample output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other outputs and the internal model are similarly reviewed in detail and at a high level for accuracy, reasonability and consistency with prior results. The CPRB also reviews the third-party model when significant changes are made to the software or model. The review is performed by the CPRB Board Actuary who is familiar with applicable funding methods as well as the manner in which the model generates its output.

The results presented herewith were prepared solely by the West Virginia Consolidated Public Retirement Board for the purposes herein stated and may not be appropriate to use for other purposes. Use of this report for any other purposes or by anyone other than the West Virginia Consolidated Public Retirement Board and its auditors may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. No one may make any representations or warranties based on any statements or conclusions contained in this report without prior written consent of the CPRB Board Actuary.

I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions about it.

Respectfully,

Kenneth M. Woodson Jr.

Kenneth M. Woodson Jr., FSA, MAAA, Ph.D.

CPRB Board Actuary



**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*Natural Resources Police Officers Retirement System*

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**SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS**

**Valuation Date:** July 1, 2022

**Funding Method and Basis of Assumptions**

The valuation is prepared under the Entry Age Cost Method with individually computed accrued liabilities. The Normal Cost is computed in aggregate. Experience studies are performed at least once in every five-year period. This valuation was prepared on the basis of assumptions that were recommended to and adopted by the Board based on an experience study covering the period from July 1, 2015, to June 30, 2020. These assumptions will remain in effect for valuation purposes until such time as the Board adopts revised assumptions.

**Interest Return and Expenses**

The interest rate assumption is a net return rate of 7.25% annually, net of investment and administrative expenses.

**Pre-Retirement Mortality**

100% of Pub-2010 Safety Employee Mortality Tables, median, amount-weighted, projected generationally with Scale MP-2020.

**Post-Retirement Mortality**

Post-retirement mortality tables are as follows:

- Healthy Male: 98% of Pub-2010 Safety Retiree Male Mortality Table, median, amount-weighted, projected generationally with Scale MP-2020.
- Healthy Female: 99% of Pub-2010 Safety Retiree Female Mortality Table, median, amount-weighted, projected generationally with Scale MP-2020.
- Disabled Male: 124% of Pub-2010 Safety Disabled Male Mortality Tables, amount-weighted, projected generationally with Scale MP-2020.
- Disabled Female: 100% of Pub-2010 Safety Disabled Female Mortality Tables, amount-weighted, projected generationally with Scale MP-2020.
- Beneficiary Male: 111% of Pub-2010 Contingent Survivor Male Table, median, amount-weighted, projected generationally with Scale MP-2020.
- Beneficiary Female: 109% of Pub-2010 Contingent Survivor Female Table, median, amount-weighted, projected generationally with Scale MP-2020.

**Salary Scale**

An annual salary increase rate of 5.75% in each of the first two years of service, decreasing to 5.25% for years three through five, 4.75% for years six through ten, and 4.25% for all years in excess of the first ten years.

**Withdrawal Rates**

Withdrawal rates predict termination of employment prior to unreduced retirement eligibility. A sample of unisex rates by age are:

| Age | Rate of<br>Withdrawal |
|-----|-----------------------|
| 30  | 0.0440                |
| 40  | 0.0264                |
| 50  | 0.0200                |
| 55  | 0.0200                |

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
*Natural Resources Police Officers Retirement System*

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**Disability Rates**

Disability rates predict an active member becoming disabled prior to unreduced retirement eligibility. A sample of disability rates by age are:

| Age | Rate of Disablement |
|-----|---------------------|
| 30  | 0.0012              |
| 40  | 0.0031              |
| 50+ | 0.0040              |

It is assumed that members eligible for unreduced retirement will elect retirement prior to becoming disabled. It is also assumed that retired members will not become disabled following retirement due to duty related causes incurred prior to retirement.

Disability retirement benefits vary by duty and non-duty causes. Disability retirements are assumed to occur in the following percentages:

| Type of Disability       | Probability |
|--------------------------|-------------|
| Duty-Related Full        | 0.50        |
| Duty-Related Partial     | 0.25        |
| Non-Duty-Related Full    | 0.20        |
| Non-Duty-Related Partial | 0.05        |

**Family Composition**

In determining the value of pre-retirement spousal death benefits, it is assumed that 90% of all members will be married at death. Males are assumed to be three years older than their female spouse.

**Accrual of Future Service**

NRPORS employment is considered a full-time professional position. All active members are assumed to complete sufficient hours to accrue one year of service in each future year of employment.

**Non-Contributory Service Credits for Military Service**

At retirement, a member is assumed to be granted 1.25 additional year of service for benefits due to allowable military service, plus 2.25 additional years for unused annual leave and/or sick leave for a total of 3.5 additional years.

**Retirement Rates**

40% of members are assumed to retire when first eligible for unreduced benefits at the earlier of (a) attainment of age 55 and age plus service at least 70, or (b) attainment of age 62 and 10 years of service. An active member who has already attained eligibility for normal retirement has a 20% probability of retiring each year thereafter with 100% retiring on or after attainment of age 62.

**Asset Valuation Method**

The asset valuation method changed from market value of assets to a four-year 25% level asset smoothing method, implemented prospectively from July 1, 2022.

**West Virginia Consolidated Public Retirement Board**  
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***Natural Resources Police Officers Retirement System***

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**Asset Valuation Method (continued)**

4-year 25% smoothing of actuarial gain or (loss) on trust fund return:

- Implemented over 4 years, prospectively commencing July 1, 2022 for the experience for the trust year ending June 30, 2022.
- Actuarial gain or (loss) on assets is calculated as the difference between the expected return under valuation assumptions based on the smoothed Actuarial Value of Assets and the actual trust fund return.
- Actuarial gain or (loss) is recognized at 25% of the original amount each year until fully recognized in the fourth year.
- Total accumulated deferred gain or (loss) amounts are used to adjust the reported Market Value of Assets to determine the Actuarial Value of Assets.

**Plan Contributions**

Member and employer contributions are calculated as a percentage of total members' payroll. Amounts are deposited to the Trust Fund on a monthly basis. For interest calculation purposes, all amounts are treated as being deposited on an average of half-way through the Plan year.

**West Virginia Consolidated Public Retirement Board**  
**Actuarial Section**  
**Natural Resources Police Officers Retirement System**

**Schedule of Active Member Valuation Data**

| Valuation Date | Number | Annual Payroll | Annual Average Pay | % Change in Average Pay | Number of Employers |
|----------------|--------|----------------|--------------------|-------------------------|---------------------|
| 6/30/2022      | 115    | \$ 6,589,000   | \$ 57,296          | 2.2%                    | 1                   |
| 6/30/2021      | 111    | 6,224,000      | 56,072             | 0.0%                    | 1                   |

**Schedule of Funding Progress (in thousands)**

| Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) |          | Unfunded AAL (UAAL) (b-a) | Funded Ratio (a/b) | Covered Payroll (c) | UAAL as a % of Covered Payroll ((b-a)/c) |
|----------------|-------------------------------|-----------------------------------|----------|---------------------------|--------------------|---------------------|--|
|                |                               | Entry Age (b)                     |          |                           |                    |                     |  |
| 7/1/2022       | \$ 27,121                     | \$ 30,028                         | \$ 2,907 | 90.3%                     | \$ 6,589           | 44.1%               |  |
| 7/1/2021       | 25,013                        | 27,860                            | 2,847    | 89.8%                     | 6,224              | 45.7%               |  |

**Solvency Test**

| Valuation Date | (1) Active Member Contributions | (2) Terms, Retirees, and Beneficiaries | (3) Active Members (Employer Financed Portion) | Valuation of Assets | % of Accrued Liabilities Covered by Valuation Assets |        |       |
|----------------|---------------------------------|--|--|---------------------|--|--------|-------|
|                |                                 |  |  |                     | (1)  | (2)    | (3)   |
| 6/30/2022      | \$ 5,060,054                    | \$ 5,233,000                           | \$ 19,734,946                                  | \$ 27,121,000       | 100.0%   | 100.0% | 88.3% |
| 6/30/2021      | 4,710,383                       | 2,802,000                              | 20,347,617                                     | \$ 25,013,000       | 100.0%   | 100.0% | 86.0% |

**Schedule of Retirees and Beneficiaries Added and Removed**

| Fiscal Year Ended | Added  |                   | Removed |                   | Year End |                   | % Increase in Annual Allowances | Average Annual Allowances |
|-------------------|--------|-------------------|---------|-------------------|----------|-------------------|---------------------------------|---------------------------|
|                   | Number | Annual Allowances | Number  | Annual Allowances | Number   | Annual Allowances |                                 |                           |
| 2022              | 4      | \$ 210,857        | -       | -                 | 7        | \$ 406,353        | 207.9%                          | \$ 58,050.43              |
| 2021              | -      | -                 | -       | -                 | 3        | 195,496           | 0.0%                            | -                         |

**Changes in Unfunded Actuarial Liability**

|  |                     |
|--|---------------------|
| Unfunded Actuarial Liability, January 2, 2021      | \$ 2,847,000        |
| Interest   | 236,000             |
| Normal cost  | 1,097,000           |
| Contributions                                      | (1,394,000)         |
| Assumption changes                                 | -                   |
| Liability (Gain)/Loss                              | (760,000)           |
| Actuarial Asset (Gain)/Loss                        | 881,000             |
| <b>Unfunded Actuarial Liability, June 30, 2022</b> | <b>\$ 2,907,000</b> |

**Schedule of Contributions**

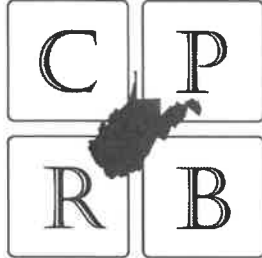
The Schedule of Contributions is included in the Required Supplementary Information provided in the Financial Section of this Annual Comprehensive Financial Report.

**Plan Provisions**

A discussion of plan provisions is included in Note 2 to the financial statements included in the Financial Section.



# Statistical Section



2023 ANNUAL COMPREHENSIVE FINANCIAL REPORT  
*For the Fiscal Year Ended June 30, 2023*

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# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Overview

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The statistical section of the annual comprehensive financial report provides information to the reader to assist in understanding the information in the financial statements, note disclosures, and required supplementary information regarding the Retirement Systems' overall financial health. The information in this section is obtained from annual comprehensive financial reports and other internal sources.

#### Financial Trends

These schedules contain trend information to help the reader understand how the Retirement Systems' financial performance has changed over time.

- Additions by Source, Deductions by Type, and Changes in Plan Net Position
- Benefit by Type

#### Retirees and Beneficiaries

These schedules provide information concerning the retirees and beneficiaries receiving benefits.

- Retired Members by Type of Benefit
- Average Monthly Benefit Payments

#### Participating Units

This schedule provides information concerning units participating in the various Retirement Systems.

- Largest Employers



# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Additions by Source, Deductions by Type, and Changes in Plan Net Assets

#### Public Employees Retirement System

(in thousands)

| Fiscal<br>Year | Additions     |            |            |           |
|----------------|---------------|------------|------------|-----------|
|                | Contributions |            | Investment | Other     |
|                | Member        | Employer   | Income     | Income    |
| 2023           | \$ 89,190     | \$ 152,675 | \$ 669,213 | \$ 11,682 |
| 2022           | 81,165        | 167,761    | (542,500)  | 1,238     |
| 2021           | 78,762        | 159,259    | 2,170,293  | 1,154     |
| 2020           | 75,857        | 155,230    | 215,355    | 866       |
| 2019           | 70,357        | 147,031    | 393,179    | 763       |
| 2018           | 65,150        | 152,541    | 606,303    | 1,497     |
| 2017           | 63,578        | 165,676    | 875,090    | 1,031     |
| 2016           | 62,801        | 186,770    | (6,827)    | 297       |
| 2015           | 61,838        | 189,947    | 219,329    | 17        |
| 2014           | 60,899        | 194,728    | 864,023    | 50        |

| Fiscal<br>Year | Deductions          |                        |                            |           | Total Change<br>in Plan<br>Net Position |
|----------------|---------------------|------------------------|----------------------------|-----------|---|
|                | Benefit<br>Payments | Service                |                            | Refunds   |   |
|                |                     | Transfers<br>to (from) | Administrative<br>Expenses |           |   |
| 2023           | \$ 507,209          | \$ 2,914               | \$ 3,736                   | \$ 15,131 | \$ 393,770                              |
| 2022           | 489,324             | (20)                   | 3,520                      | 13,395    | (798,555)                               |
| 2021           | 469,160             | 21,432                 | 6,311                      | 9,934     | 1,902,631                               |
| 2020           | 453,001             | (227)                  | 6,186                      | 10,549    | (22,201)                                |
| 2019           | 436,965             | (232)                  | 6,915                      | 11,782    | 155,900                                 |
| 2018           | 421,936             | -                      | 6,850                      | 12,248    | 384,457                                 |
| 2017           | 402,213             | (110)                  | 4,989                      | 10,566    | 687,717                                 |
| 2016           | 382,577             | (123)                  | 4,886                      | 11,877    | (156,176)                               |
| 2015           | 363,495             | (265)                  | 4,785                      | 10,669    | 92,447                                  |
| 2014           | 342,683             | (83)                   | 4,695                      | 10,929    | 761,476                                 |

**West Virginia Consolidated Public Retirement Board**  
**Statistical Section**

***Additions by Source, Deductions by Type, and Changes in Plan Net Assets***

**Teachers' Defined Benefit Retirement System**  
(in thousands)

| Fiscal<br>Year | Additions     |            |            |          |
|----------------|---------------|------------|------------|----------|
|                | Contributions |            | Investment | Other    |
|                | Member        | Employer   | Income     | Income   |
| 2023           | \$ 104,429    | \$ 452,521 | \$ 739,885 | \$ 3,925 |
| 2022           | 95,694        | 483,005    | (600,544)  | 3,573    |
| 2021           | 97,258        | 417,334    | 2,429,811  | 2,944    |
| 2020           | 96,511        | 463,840    | 241,591    | 3,371    |
| 2019           | 93,219        | 481,525    | 444,661    | 3,446    |
| 2018           | 89,128        | 471,837    | 688,273    | 3,046    |
| 2017           | 91,503        | 451,447    | 995,095    | 2,822    |
| 2016           | 95,177        | 423,195    | (18,403)   | 3,918    |
| 2015           | 94,694        | 490,640    | 255,988    | 3,460    |
| 2014           | 90,612        | 514,248    | 1,003,180  | 3,775    |

| Fiscal<br>Year | Deductions          |                        |                            |           | Total Change<br>in Plan<br>Net Position |
|----------------|---------------------|------------------------|----------------------------|-----------|---|
|                | Benefit<br>Payments | Service                | Administrative<br>Expenses | Refund    |   |
|                |                     | Transfers<br>to (from) |                            |           |   |
| 2023           | \$ 885,273          | \$ 190                 | \$ 4,192                   | \$ 12,558 | \$ 398,547                              |
| 2022           | 877,766             | 188                    | 3,951                      | 12,753    | (912,930)                               |
| 2021           | 863,132             | 151                    | 5,221                      | 8,384     | 2,070,459                               |
| 2020           | 844,272             | 232                    | 5,525                      | 9,695     | (54,411)                                |
| 2019           | 827,539             | 174                    | 6,239                      | 10,769    | 178,130                                 |
| 2018           | 806,511             | -                      | 6,035                      | 9,591     | 430,147                                 |
| 2017           | 780,030             | (149)                  | 4,582                      | 9,028     | 747,376                                 |
| 2016           | 749,139             | 133                    | 4,507                      | 10,364    | (260,256)                               |
| 2015           | 710,833             | 262                    | 4,432                      | 8,006     | 121,249                                 |
| 2014           | 668,923             | 265                    | 4,348                      | 7,287     | 930,992                                 |

# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Additions by Source, Deductions by Type, and Changes in Plan Net Assets

State Police Death, Disability, and Retirement System  
(in thousands)

| Fiscal<br>Year | Additions     |          |            |        |
|----------------|---------------|----------|------------|--------|
|                | Contributions |          | Investment | Other  |
|                | Member        | Employer | Income     | Income |
| 2023           | \$ 22         | \$ 40    | \$ 62,950  | \$ 704 |
| 2022           | 26            | 17,842   | (51,130)   | 721    |
| 2021           | 34            | 16,699   | 208,656    | 822    |
| 2020           | 35            | 13,246   | 21,252     | 530    |
| 2019           | 110           | 15,595   | 38,174     | 752    |
| 2018           | 186           | 24,829   | 60,939     | 691    |
| 2017           | 362           | 17,319   | 87,793     | 847    |
| 2016           | 320           | 13,977   | (1,229)    | 594    |
| 2015           | 445           | 21,668   | 22,866     | 861    |
| 2014           | 545           | 26,218   | 90,872     | 739    |

| Fiscal<br>Year | Deductions |                        |                |        | Total Change<br>in Plan<br>Net Position |
|----------------|------------|------------------------|----------------|--------|---|
|                | Benefit    | Service                | Administrative | Refund |   |
|                | Payments   | Transfers<br>to (from) | Expenses       |        |   |
| 2023           | \$ 52,429  |                        | \$ 358         |        | \$ 10,929                               |
| 2022           | 51,447     | -                      | 340            | -      | (84,328)                                |
| 2021           | 50,228     | -                      | 54             | -      | 175,929                                 |
| 2020           | 49,225     | -                      | 54             | -      | (14,216)                                |
| 2019           | 47,551     | -                      | 63             | -      | 7,017                                   |
| 2018           | 45,529     | -                      | 61             | -      | 41,055                                  |
| 2017           | 43,325     | -                      | 46             | -      | 62,950                                  |
| 2016           | 41,969     | -                      | 53             | -      | (28,360)                                |
| 2015           | 39,708     | -                      | 51             | -      | 6,081                                   |
| 2014           | 37,566     | -                      | 53             | -      | 80,755                                  |

**West Virginia Consolidated Public Retirement Board**

**Statistical Section**

***Additions by Source, Deductions by Type, and Changes in Plan Net Assets***

**State Police Retirement System**

(in thousands)

| Fiscal<br>Year | Additions     |          |            |        |
|----------------|---------------|----------|------------|--------|
|                | Contributions |          | Investment | Other  |
|                | Member        | Employer | Income     | Income |
| 2023           | \$ 4,860      | \$ 8,100 | \$ 24,933  | \$ 129 |
| 2022           | 4,395         | 9,428    | (19,815)   | -      |
| 2021           | 4,185         | 7,928    | 72,138     | -      |
| 2020           | 4,168         | 4,850    | 7,010      | -      |
| 2019           | 3,905         | 4,556    | 11,730     | -      |
| 2018           | 3,621         | 4,205    | 16,303     | -      |
| 2017           | 3,634         | 3,657    | 22,346     | -      |
| 2016           | 3,755         | 3,724    | 91         | -      |
| 2015           | 3,609         | 4,060    | 4,972      | -      |
| 2014           | 3,630         | 4,049    | 17,756     | -      |

| Fiscal<br>Year | Deductions          |                                   |                            |        | Total Change<br>in Plan<br>Net Position |
|----------------|---------------------|-----------------------------------|----------------------------|--------|---|
|                | Benefit<br>Payments | Service<br>Transfers<br>to (from) | Administrative<br>Expenses | Refund |   |
|                |                     |                                   |                            |        |   |
| 2023           | \$ 6,826            |                                   | \$ 135                     | \$ 320 | \$ 30,741                               |
| 2022           | 5,290               | -                                 | 120                        | 453    | (11,855)                                |
| 2021           | 3,302               | -                                 | 59                         | 297    | 80,593                                  |
| 2020           | 2,140               | -                                 | 67                         | 358    | 13,463                                  |
| 2019           | 1,473               | -                                 | 60                         | 471    | 18,187                                  |
| 2018           | 1,186               | -                                 | 60                         | 656    | 22,227                                  |
| 2017           | 957                 | -                                 | 64                         | 497    | 28,119                                  |
| 2016           | 811                 | -                                 | 47                         | 260    | 6,452                                   |
| 2015           | 633                 | -                                 | 45                         | 418    | 11,545                                  |
| 2014           | 682                 | -                                 | 43                         | 230    | 24,480                                  |



West Virginia Consolidated Public Retirement Board

Statistical Section

Additions by Source, Deductions by Type, and Changes in Plan Net Assets

Deputy Sheriffs Retirement System  
(in thousands)

| Fiscal Year | Additions     |          |            |        |
|-------------|---------------|----------|------------|--------|
|             | Contributions |          | Investment | Other  |
|             | Member        | Employer | Income     | Income |
| 2023        | \$ 5,777      | \$ 8,811 | \$ 24,926  | \$ 322 |
| 2022        | 5,531         | 8,258    | (19,974)   | 404    |
| 2021        | 5,177         | 7,213    | 76,547     | 392    |
| 2020        | 4,860         | 6,861    | 7,528      | 404    |
| 2019        | 4,846         | 6,705    | 13,200     | 479    |
| 2018        | 4,416         | 6,194    | 19,361     | 471    |
| 2017        | 4,166         | 5,917    | 27,282     | 433    |
| 2016        | 4,306         | 6,071    | (64)       | 494    |
| 2015        | 4,068         | 5,972    | 6,534      | 506    |
| 2014        | 3,908         | 5,977    | 24,438     | 556    |

| Fiscal Year | Deductions       |                     |                         |          | Total Change in Plan Net Position |
|-------------|------------------|---------------------|-------------------------|----------|-----------------------------------|
|             | Benefit Payments | Service             | Administrative Expenses | Refund   |                                   |
|             |                  | Transfers to (from) |                         |          |                                   |
| 2023        | \$ 15,740        | \$ -                | \$ 137                  | \$ 1,225 | \$ 22,734                         |
| 2022        | 14,491           | -                   | 126                     | 981      | (21,379)                          |
| 2021        | 13,364           | (166)               | 136                     | 530      | 75,465                            |
| 2020        | 12,260           | -                   | 133                     | 716      | 6,544                             |
| 2019        | 11,338           | -                   | 145                     | 602      | 13,145                            |
| 2018        | 9,614            | -                   | 137                     | 997      | 19,694                            |
| 2017        | 8,957            | -                   | 102                     | 1,186    | 27,553                            |
| 2016        | 8,187            | -                   | 101                     | 611      | 1,908                             |
| 2015        | 7,554            | -                   | 96                      | 817      | 8,613                             |
| 2014        | 6,955            | (2)                 | 97                      | 839      | 26,990                            |

# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Additions by Source, Deductions by Type, and Changes in Plan Net Assets

#### Judges Retirement System

(in thousands)

| Fiscal Year | Additions     |          |                   |              |
|-------------|---------------|----------|-------------------|--------------|
|             | Contributions |          | Investment Income | Other Income |
|             | Member        | Employer |                   |              |
| 2023        | \$ 369        | \$ 797   | \$ 22,031         | \$ 1,303     |
| 2022        | 319           | 1,052    | (17,631)          | -            |
| 2021        | 295           | 886      | 68,611            | -            |
| 2020        | 301           | 791      | 6,850             | -            |
| 2019        | 331           | 779      | 12,085            | -            |
| 2018        | 364           | 735      | 18,373            | -            |
| 2017        | 372           | 747      | 26,270            | -            |
| 2016        | 383           | 739      | (175)             | -            |
| 2015        | 413           | 2,845    | 6,525             | -            |
| 2014        | 474           | 2,456    | 25,263            | -            |

| Fiscal Year | Deductions       |                   |                         |        | Total Change in Plan Net Position |
|-------------|------------------|-------------------|-------------------------|--------|-----------------------------------|
|             | Benefit Payments | Service Transfers |                         | Refund |                                   |
|             |                  | to (from)         | Administrative Expenses |        |                                   |
| 2023        | \$ 5,134         | \$ -              | \$ 121                  | \$ -   | \$ 19,245                         |
| 2022        | 5,046            | -                 | 112                     | -      | (21,418)                          |
| 2021        | 4,810            | -                 | 10                      | -      | 64,972                            |
| 2020        | 4,897            | -                 | 10                      | -      | 3,035                             |
| 2019        | 4,846            | 86                | 11                      | 87     | 8,165                             |
| 2018        | 4,765            | -                 | 8                       | 167    | 14,532                            |
| 2017        | 4,510            | 12                | 6                       | 99     | 22,762                            |
| 2016        | 4,382            | -                 | 27                      | 47     | (3,509)                           |
| 2015        | 4,244            | -                 | 6                       | 69     | 5,464                             |
| 2014        | 4,374            | (32)              | 7                       | 81     | 23,763                            |

West Virginia Consolidated Public Retirement Board

Statistical Section

*Additions by Source, Deductions by Type, and Changes in Plan Net Assets*

Emergency Medical Services Retirement System

(in thousands)

| Fiscal<br>Year | Additions     |          |            |          |
|----------------|---------------|----------|------------|----------|
|                | Contributions |          | Investment | Other    |
|                | Member        | Employer | Income     | Income   |
| 2023           | \$ 3,272      | \$ 3,662 | \$ 9,618   | \$ 2,232 |
| 2022           | 2,924         | 3,610    | (7,672)    | -        |
| 2021           | 2,842         | 3,523    | 28,643     | -        |
| 2020           | 2,531         | 3,078    | 2,817      | -        |
| 2019           | 2,302         | 2,844    | 4,774      | -        |
| 2018           | 2,231         | 2,765    | 6,867      | -        |
| 2017           | 2,314         | 2,859    | 9,506      | -        |
| 2016           | 2,222         | 2,744    | 18         | 1        |
| 2015           | 2,071         | 2,607    | 2,144      | -        |
| 2014           | 2,077         | 2,442    | 7,874      | 1        |

| Fiscal<br>Year | Deductions          |                                   |                            |          | Total Change<br>in Plan<br>Net Position |
|----------------|---------------------|-----------------------------------|----------------------------|----------|---|
|                | Benefit<br>Payments | Service<br>Transfers<br>to (from) | Administrative<br>Expenses | Refund   |   |
|                |                     |                                   |                            |          |   |
| 2023           | \$ 4,686            | \$ -                              | \$ 53                      | \$ 1,075 | \$ 12,970                               |
| 2022           | 4,184               | -                                 | 47                         | 891      | (6,260)                                 |
| 2021           | 3,752               | -                                 | 78                         | 962      | 30,216                                  |
| 2020           | 3,348               | -                                 | 73                         | 969      | 4,036                                   |
| 2019           | 2,989               | -                                 | 77                         | 1,187    | 5,667                                   |
| 2018           | 2,582               | -                                 | 73                         | 1,071    | 8,137                                   |
| 2017           | 2,201               | -                                 | 53                         | 575      | 11,850                                  |
| 2016           | 1,953               | -                                 | 49                         | 605      | 2,378                                   |
| 2015           | 1,600               | -                                 | 46                         | 666      | 4,510                                   |
| 2014           | 1,290               | (140)                             | 42                         | 459      | 10,743                                  |

**West Virginia Consolidated Public Retirement Board**  
**Statistical Section**

***Additions by Source, Deductions by Type, and Changes in Plan Net Assets***

**Municipal Police Officers & Firefighters Retirement System**  
(in thousands)

| Fiscal<br>Year | Additions     |          |            |        |
|----------------|---------------|----------|------------|--------|
|                | Contributions |          | Investment | Other  |
|                | Member        | Employer | Income     | Income |
| 2023           | \$ 3,168      | \$ 3,168 | \$ 2,535   | \$ 19  |
| 2022           | 2,673         | 2,672    | (1,830)    | -      |
| 2021           | 2,158         | 2,136    | 5,202      | 68     |
| 2020           | 1,717         | 1,721    | 437        | 1      |
| 2019           | 1,438         | 1,438    | 611        | 38     |
| 2018           | 1,087         | 1,089    | 547        | -      |
| 2017           | 846           | 846      | 606        | -      |
| 2016           | 644           | 644      | 28         | -      |
| 2015           | 417           | 417      | 66         | -      |
| 2014           | 279           | 279      | 125        | -      |

| Fiscal<br>Year | Deductions          |                        |                            |        | Total Change<br>in Plan<br>Net Position |
|----------------|---------------------|------------------------|----------------------------|--------|---|
|                | Benefit<br>Payments | Service                |                            | Refund |   |
|                |                     | Transfers<br>to (from) | Administrative<br>Expenses |        |   |
| 2023           | \$ 39               | \$ -                   | \$ 12                      | \$ 560 | \$ 8,279                                |
| 2022           | 41                  | -                      | 10                         | 365    | 3,099                                   |
| 2021           | 41                  | -                      | 41                         | 273    | 9,209                                   |
| 2020           | 39                  | -                      | 36                         | 209    | 3,592                                   |
| 2019           | 36                  | (28)                   | 35                         | 262    | 3,220                                   |
| 2018           | 20                  | -                      | 23                         | 125    | 2,555                                   |
| 2017           | -                   | -                      | 14                         | 79     | 2,205                                   |
| 2016           | -                   | -                      | 11                         | 34     | 1,271                                   |
| 2015           | -                   | -                      | 7                          | 49     | 844                                     |
| 2014           | -                   | -                      | 3                          | 7      | 673                                     |

**Natural Resources Police Officers Retirement System\***  
(in thousands)

| Fiscal<br>Year | Additions     |          |            |        |
|----------------|---------------|----------|------------|--------|
|                | Contributions |          | Investment | Other  |
|                | Member        | Employer | Income     | Income |
| 2023           | \$ 678        | \$ 856   | \$ 2,128   | \$ -   |
| 2022           | 615           | 779      | (1,661)    | -      |
| 2021           | 263           | 332      | 2,996      | 21,432 |

| Fiscal<br>Year | Deductions          |                        |                            |        | Total Change<br>in Plan<br>Net Position |
|----------------|---------------------|------------------------|----------------------------|--------|---|
|                | Benefit<br>Payments | Service                |                            | Refund |   |
|                |                     | Transfers<br>to (from) | Administrative<br>Expenses |        |   |
| 2023           | \$ 449              | \$ -                   | \$ 11                      | \$ 31  | \$ 3,171                                |
| 2022           | 385                 | (162)                  | 10                         | 36     | (536)                                   |
| 2021           | -                   | -                      | -                          | 10     | 25,013                                  |

\* The NRPORS was established in January 2021.

# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Additions by Source, Deductions by Type, and Changes in Plan Net Assets

#### Teachers' Defined Contribution Retirement System (in thousands)

| Fiscal Year | Additions     |          |            |        |
|-------------|---------------|----------|------------|--------|
|             | Contributions |          | Investment | Other  |
|             | Member        | Employer | Income     | Income |
| 2023        | \$ 5,597      | \$ 9,329 | \$ 70,638  | \$ 471 |
| 2022        | 5,703         | 9,536    | (83,137)   | 112    |
| 2021        | 5,980         | 10,307   | 141,739    | 12     |
| 2020        | 6,219         | 9,965    | 35,185     | 32     |
| 2019        | 6,126         | 10,204   | 34,920     | 95     |
| 2018        | 6,075         | 11,664   | 41,447     | 34     |
| 2017        | 6,971         | 10,510   | 49,571     | 980    |
| 2016        | 6,438         | 11,401   | 3,542      | 87     |
| 2015        | 6,504         | 11,194   | 15,530     | 354    |
| 2014        | 6,632         | 10,284   | 51,102     | 258    |

| Fiscal Year | Deductions       |                     |                         |           | Total Change in Plan Net Position |
|-------------|------------------|---------------------|-------------------------|-----------|-----------------------------------|
|             | Benefit Payments | Service             | Administrative Expenses | Refund    |                                   |
|             |                  | Transfers to (from) |                         |           |                                   |
| 2023        | \$ -             | \$ -                | \$ 282                  | \$ 26,335 | \$ 59,418                         |
| 2022        | -                | (6)                 | 281                     | 31,907    | (99,968)                          |
| 2021        | -                | 15                  | 465                     | 22,838    | 134,720                           |
| 2020        | -                | (5)                 | 784                     | 17,476    | 33,146                            |
| 2019        | -                | -                   | 752                     | 16,282    | 34,311                            |
| 2018        | -                | -                   | 1,054                   | 12,173    | 45,993                            |
| 2017        | -                | 247                 | 1,288                   | 18,432    | 48,065                            |
| 2016        | -                | (10)                | 1,417                   | 16,046    | 4,015                             |
| 2015        | -                | 3                   | 1,064                   | 15,552    | 16,963                            |
| 2014        | -                | (8)                 | 1,072                   | 15,949    | 51,263                            |

The TDCRS is a multiple employer defined contribution retirement system, which is a money purchase pension plan covering primarily full-time employees of the State's 55 county public school systems, the State Department of Education, and the Schools for the Deaf and Blind who were hired between July 1, 1991 and June 30, 2005. TDCRS benefits depend solely on amounts contributed to the plan plus investment earnings. TDCRS closed participation to new members effective June 30, 2005.

In 2008, the West Virginia Legislature provided an opportunity for members of the TDCRS to elect to transfer to the West Virginia Teachers' Retirement System (TRS). The transfer occurred on July 1, 2008 and a total of 15, 152 TDCRS members transferred to TRS.

**West Virginia Consolidated Public Retirement Board**  
**Statistical Section**  
**Benefits by Type**

The following schedules provide information on the benefits provided by type of benefit for each plan.

**Public Employees Retirement System**  
(in thousands)

| Fiscal Year | Age & Service Benefits |           | Disability Benefits | Death Benefits & Refunds |             |
|-------------|------------------------|-----------|---------------------|--------------------------|-------------|
|             | Retirants              | Survivors |                     | Death                    | Resignation |
| 2023        | \$ 446,356             | \$ 11,259 | \$ 29,594           | \$ 1,896                 | \$ 13,235   |
| 2022        | 448,103                | 10,896    | 30,325              | 164                      | 13,231      |
| 2021        | 427,658                | 10,475    | 31,027              | 563                      | 9,371       |
| 2020        | 411,166                | 10,315    | 31,520              | 1,523                    | 9,026       |
| 2019        | 378,882                | 29,435    | 28,648              | 189                      | 11,593      |
| 2018        | 355,308                | 33,028    | 33,600              | 1,041                    | 11,207      |
| 2017        | 338,865                | 31,400    | 31,944              | 990                      | 9,580       |
| 2016        | 320,869                | 30,223    | 31,868              | 1,317                    | 10,177      |
| 2015        | 304,113                | 28,795    | 30,480              | 1,123                    | 9,653       |
| 2014        | 285,706                | 27,880    | 29,933              | 80                       | 10,013      |

**Teachers' Defined Benefit Retirement System**  
(in thousands)

| Fiscal Year | Age & Service Benefits |           | Disability Benefits | Death Benefits & Refunds |             |
|-------------|------------------------|-----------|---------------------|--------------------------|-------------|
|             | Retirants              | Survivors |                     | Death                    | Resignation |
| 2023        | \$ 855,460             | \$ 4,426  | \$ 25,387           | \$ 4,268                 | \$ 8,290    |
| 2022        | 847,287                | 4,555     | 25,924              | 5,488                    | 7,265       |
| 2021        | 832,041                | 4,410     | 26,681              | 3,157                    | 5,227       |
| 2020        | 812,961                | 4,479     | 26,832              | 2,826                    | 6,869       |
| 2019        | 773,205                | 27,583    | 26,751              | 3,090                    | 7,679       |
| 2018        | 748,486                | 30,522    | 27,503              | 2,203                    | 7,388       |
| 2017        | 723,929                | 29,482    | 26,576              | 2,095                    | 6,976       |
| 2016        | 695,555                | 27,591    | 26,292              | 4,231                    | 5,834       |
| 2015        | 658,674                | 25,230    | 25,947              | 3,910                    | 5,078       |
| 2014        | 618,616                | 24,327    | 25,183              | 2,418                    | 5,666       |

**State Police Death, Disability, and Retirement System**  
(in thousands)

| Fiscal Year | Age & Service Benefits |           | Disability Benefits | Death Benefits & Refunds |             |
|-------------|------------------------|-----------|---------------------|--------------------------|-------------|
|             | Retirants              | Survivors |                     | Death                    | Resignation |
| 2023        | \$ 48,805              | \$ 1,020  | \$ 8,604            | \$ -                     | \$ -        |
| 2022        | 42,001                 | 1,033     | 8,413               | -                        | -           |
| 2021        | 40,949                 | 1,007     | 8,272               | -                        | -           |
| 2020        | 40,052                 | 1,021     | 8,152               | -                        | -           |
| 2019        | 36,524                 | 3,023     | 8,004               | -                        | -           |
| 2018        | 34,052                 | 3,610     | 7,867               | -                        | -           |
| 2017        | 32,403                 | 3,436     | 7,486               | -                        | -           |
| 2016        | 31,525                 | 3,092     | 7,352               | -                        | -           |
| 2015        | 30,240                 | 2,320     | 7,148               | -                        | -           |
| 2014        | 28,469                 | 2,209     | 6,888               | -                        | -           |

**West Virginia Consolidated Public Retirement Board**  
**Statistical Section**  
**Benefits by Type**

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**State Police Retirement System**  
(in thousands)

| Fiscal Year | Age & Service Benefits |           | Disability Benefits | Death Benefits & Refunds |             |
|-------------|------------------------|-----------|---------------------|--------------------------|-------------|
|             | Retirants              | Survivors |                     | Death                    | Resignation |
| 2023        | \$ 5,802               | \$ 247    | \$ 777              | \$ -                     | \$ 320      |
| 2022        | 4,411                  | 229       | 650                 | -                        | 453         |
| 2021        | 2,497                  | 204       | 601                 | -                        | 297         |
| 2020        | 1,448                  | 489       | 203                 | -                        | 358         |
| 2019        | 815                    | 201       | 457                 | -                        | 471         |
| 2018        | 518                    | 252       | 416                 | -                        | 656         |
| 2017        | 425                    | 199       | 329                 | -                        | 501         |
| 2016        | 344                    | 153       | 317                 | -                        | 257         |
| 2015        | 319                    | 21        | 292                 | -                        | 419         |
| 2014        | 316                    | 22        | 290                 | -                        | 284         |
| 2013        | 266                    | 48        | 243                 | 8                        | 241         |

**Deputy Sheriffs Retirement System**  
(in thousands)

| Fiscal Year | Age & Service Benefits |           | Disability Benefits | Death Benefits & Refunds |             |
|-------------|------------------------|-----------|---------------------|--------------------------|-------------|
|             | Retirants              | Survivors |                     | Death                    | Resignation |
| 2023        | \$ 13,090              | \$ 272    | \$ 2,378            | \$ 13                    | \$ 1,212    |
| 2022        | 12,011                 | 181       | 2,299               | -                        | 981         |
| 2021        | 10,925                 | 156       | 2,283               | -                        | 530         |
| 2020        | 10,032                 | 147       | 2,081               | 53                       | 663         |
| 2019        | 9,388                  | 130       | 1,820               | -                        | 602         |
| 2018        | 7,654                  | 398       | 1,562               | 46                       | 951         |
| 2017        | 7,095                  | 380       | 1,493               | 235                      | 940         |
| 2016        | 6,517                  | 342       | 1,333               | 43                       | 563         |
| 2015        | 6,060                  | 271       | 1,219               | -                        | 821         |
| 2013        | 5,085                  | 250       | 976                 | -                        | 669         |

**Judges Retirement System**  
(in thousands)

| Fiscal Year | Age & Service Benefits |           | Disability Benefits | Death Benefits & Refunds |             |
|-------------|------------------------|-----------|---------------------|--------------------------|-------------|
|             | Retirants              | Survivors |                     | Death                    | Resignation |
| 2023        | \$ 4,790               | \$ 106    | \$ 150              | \$ -                     | \$ -        |
| 2022        | 4,866                  | 106       | 162                 | -                        | -           |
| 2021        | 4,564                  | 101       | 145                 | -                        | -           |
| 2020        | 4,650                  | 102       | 145                 | -                        | -           |
| 2019        | 3,894                  | 774       | 178                 | -                        | 87          |
| 2018        | 3,909                  | 856       | -                   | -                        | 167         |
| 2017        | 3,710                  | 800       | -                   | -                        | 99          |
| 2016        | 3,427                  | 955       | -                   | -                        | 47          |
| 2015        | 3,314                  | 866       | 47                  | -                        | 86          |
| 2014        | 3,310                  | 969       | 95                  | -                        | 81          |

**West Virginia Consolidated Public Retirement Board**  
**Statistical Section**  
**Benefits by Type**

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**Emergency Medical Services Retirement System**  
(in thousands)

| Fiscal Year | Age & Service Benefits |           | Disability Benefits | Death Benefits & Refunds |             |
|-------------|------------------------|-----------|---------------------|--------------------------|-------------|
|             | Retirants              | Survivors |                     | Death                    | Resignation |
| 2023        | \$ 2,842               | \$ 109    | \$ 735              | \$ 23                    | \$ 1,052    |
| 2022        | 3,366                  | 109       | 709                 | -                        | 891         |
| 2021        | 2,895                  | 129       | 728                 | 52                       | 910         |
| 2020        | 2,649                  | 75        | 624                 | 1                        | 968         |
| 2019        | 2,315                  | 87        | 587                 | 57                       | 1,130       |
| 2018        | 2,031                  | 26        | 525                 | -                        | 1,071       |
| 2017        | 1,782                  | 20        | 399                 | -                        | 575         |
| 2016        | 1,616                  | 20        | 282                 | -                        | 640         |
| 2015        | 1,320                  | 20        | 261                 | -                        | 665         |
| 2014        | 1,042                  | 22        | 228                 | 11                       | 446         |

**Municipal Police Officers & Firefighters Retirement System**  
(in thousands)

| Fiscal Year | Age & Service Benefits |           | Disability Benefits | Death Benefits & Refunds |             |
|-------------|------------------------|-----------|---------------------|--------------------------|-------------|
|             | Retirants              | Survivors |                     | Death                    | Resignation |
| 2023        | \$ -                   | \$ -      | \$ 39               | \$ 17                    | \$ 543      |
| 2022        | -                      | -         | 41                  | -                        | 365         |
| 2021        | -                      | -         | 41                  | -                        | 273         |
| 2020        | 39                     | -         | -                   | -                        | 209         |
| 2019        | 36                     | -         | -                   | 20                       | 242         |
| 2018        | -                      | -         | 20                  | -                        | 125         |
| 2017        | -                      | -         | -                   | -                        | 79          |
| 2016        | -                      | -         | -                   | -                        | 34          |
| 2015        | -                      | -         | -                   | -                        | 49          |
| 2014        | -                      | -         | -                   | -                        | 7           |
| 2013        | -                      | -         | -                   | 3                        | 2           |

**Natural Resources Police Officers Retirement System**  
(in thousands)

| Fiscal Year | Age & Service Benefits |           | Disability Benefits | Death Benefits & Refunds |             |
|-------------|------------------------|-----------|---------------------|--------------------------|-------------|
|             | Retirants              | Survivors |                     | Death                    | Resignation |
| 2023        | \$ 449                 | \$ -      | \$ -                | \$ -                     | \$ 31       |
| 2022        | 385                    | -         | -                   | -                        | 36          |
| 2021        | -                      | -         | -                   | -                        | 10          |



# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Retired Members by Type of Benefit

#### Public Employees Retirement System

| Amount of Monthly Benefit | Number of Retirants | Type of Retirement |     |       | Option Selected |          |          |       |
|---------------------------|---------------------|--------------------|-----|-------|-----------------|----------|----------|-------|
|                           |                     | A                  | B   | C     | Maximum         | Option 1 | Option 2 | Other |
| \$ 1 - 1,000              | 13,296              | 10,976             | 535 | 1,785 | 6,700           | 4,713    | 1,883    | -     |
| 1,001 - 2,000             | 9,972               | 8,782              | 275 | 915   | 5,022           | 3,497    | 1,453    | -     |
| 2,001 - 3,000             | 4,520               | 4,339              | 71  | 110   | 2,199           | 1,524    | 797      | -     |
| 3,001 - 4,000             | 1,776               | 1,746              | 19  | 11    | 853             | 553      | 370      | -     |
| 4,001 - 5,000             | 633                 | 626                | 5   | 2     | 290             | 218      | 125      | -     |
| Over \$ 5,000             | 345                 | 344                | 1   | -     | 204             | 82       | 59       | -     |
|                           | 30,542              | 26,813             | 906 | 2,823 | 15,268          | 10,587   | 4,687    | -     |

#### Teachers' Retirement System

| Amount of Monthly Benefit | Number of Retirants | Type of Retirement |     |       | Option Selected |          |          |       |
|---------------------------|---------------------|--------------------|-----|-------|-----------------|----------|----------|-------|
|                           |                     | A                  | B   | C     | Maximum         | Option 1 | Option 2 | Other |
| \$ 1 - 1,000              | 10,032              | 8,569              | 34  | 1,429 | 5,791           | 2,361    | 1,347    | 533   |
| 1,001 - 2,000             | 10,807              | 9,994              | 93  | 720   | 5,991           | 2,623    | 1,653    | 540   |
| 2,001 - 3,000             | 8,797               | 8,620              | 50  | 127   | 4,893           | 1,901    | 1,501    | 502   |
| 3,001 - 4,000             | 5,024               | 5,000              | 16  | 8     | 3,003           | 860      | 940      | 221   |
| 4,001 - 5,000             | 1,852               | 1,846              | 6   | -     | 1,218           | 244      | 333      | 57    |
| Over \$ 5,000             | 969                 | 966                | 2   | 1     | 602             | 143      | 185      | 39    |
|                           | 37,481              | 34,995             | 201 | 2,285 | 21,498          | 8,132    | 5,959    | 1,892 |

#### State Police Death, Disability, and Retirement System

| Amount of Monthly Benefit | Number of Retirants | Type of Retirement |    |     | Option Selected |          |          |       |
|---------------------------|---------------------|--------------------|----|-----|-----------------|----------|----------|-------|
|                           |                     | A                  | B  | C   | Maximum         | Option 1 | Option 2 | Other |
| \$ 1 - 1,000              | 11                  | 10                 | -  | 1   | -               | -        | -        | 11    |
| 1,001 - 2,000             | 34                  | 21                 | 2  | 11  | -               | -        | -        | 34    |
| 2,001 - 3,000             | 42                  | 28                 | 3  | 11  | -               | -        | -        | 42    |
| 3,001 - 4,000             | 50                  | 36                 | 4  | 10  | -               | -        | -        | 50    |
| 4,001 - 5,000             | 68                  | 55                 | 1  | 12  | -               | -        | -        | 68    |
| Over \$ 5,000             | 546                 | 465                | 9  | 72  | 2               | -        | -        | 546   |
|                           | 751                 | 615                | 19 | 117 | 2               | -        | -        | 751   |

#### State Police Retirement System

| Amount of Monthly Benefit | Number of Retirants | Type of Retirement |   |    | Option Selected |          |          |       |
|---------------------------|---------------------|--------------------|---|----|-----------------|----------|----------|-------|
|                           |                     | A                  | B | C  | Maximum         | Option 1 | Option 2 | Other |
| \$ 1 - 1,000              | 8                   | 7                  | 1 | -  | -               | 3        | -        | 5     |
| 1,001 - 2,000             | 7                   | 3                  | 1 | 3  | -               | -        | -        | 7     |
| 2,001 - 3,000             | 11                  | 3                  | 2 | 6  | -               | 1        | -        | 10    |
| 3,001 - 4,000             | 18                  | 17                 | 1 | -  | -               | 5        | -        | 13    |
| 4,001 - 5,000             | 42                  | 33                 | 2 | 7  | -               | 11       | -        | 31    |
| Over \$ 5,000             | 59                  | 56                 | - | 3  | -               | 19       | -        | 40    |
|                           | 145                 | 119                | 7 | 19 | -               | 39       | -        | 106   |

# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Retired Members by Type of Benefit

#### Deputy Sheriffs Retirement System

| Amount of Monthly Benefit | Number of Retirants | Type of Retirement |    |    | Option Selected |          |          |       |
|---------------------------|---------------------|--------------------|----|----|-----------------|----------|----------|-------|
|                           |                     | A                  | B  | C  | Maximum         | Option 1 | Option 2 | Other |
| \$ 1 - 1,000              | 51                  | 44                 | 1  | 6  | 8               | 11       | 9        | 23    |
| 1,001 - 2,000             | 156                 | 121                | 6  | 29 | 37              | 20       | 22       | 77    |
| 2,001 - 3,000             | 205                 | 176                | 4  | 25 | 65              | 30       | 29       | 80    |
| 3,001 - 4,000             | 81                  | 65                 | -  | 16 | 21              | 11       | 10       | 39    |
| 4,001 - 5,000             | 45                  | 39                 | 1  | 5  | 17              | 5        | 4        | 18    |
| Over \$ 5,000             | 15                  | 14                 | -  | 1  | 4               | 5        | 1        | 5     |
|                           | 553                 | 459                | 12 | 82 | 152             | 82       | 75       | 242   |

#### Judges Retirement System

| Amount of Monthly Benefit | Number of Retirants | Type of Retirement |   |   | Option Selected |          |          |       |
|---------------------------|---------------------|--------------------|---|---|-----------------|----------|----------|-------|
|                           |                     | A                  | B | C | Maximum         | Option 1 | Option 2 | Other |
| \$ 1 - 1,000              | -                   | -                  | - | - | -               | -        | -        | -     |
| 1,001 - 2,000             | -                   | -                  | - | - | -               | -        | -        | -     |
| 2,001 - 3,000             | -                   | -                  | - | - | -               | -        | -        | -     |
| 3,001 - 4,000             | -                   | -                  | - | - | -               | -        | -        | -     |
| 4,001 - 5,000             | 17                  | 14                 | 2 | 1 | -               | -        | -        | 17    |
| Over \$ 5,000             | 44                  | 43                 | - | 1 | -               | -        | -        | 44    |
|                           | 61                  | 57                 | 2 | 2 | -               | -        | -        | 61    |

#### Emergency Medical Services Retirement System

| Amount of Monthly Benefit | Number of Retirants | Type of Retirement |   |    | Option Selected |          |          |       |
|---------------------------|---------------------|--------------------|---|----|-----------------|----------|----------|-------|
|                           |                     | A                  | B | C  | Maximum         | Option 1 | Option 2 | Other |
| \$ 1 - 1,000              | 14                  | 14                 | - | -  | 11              | 2        | 1        | -     |
| 1,001 - 2,000             | 53                  | 48                 | 3 | 2  | 27              | 14       | 3        | 9     |
| 2,001 - 3,000             | 54                  | 47                 | 2 | 5  | 21              | 11       | 7        | 15    |
| 3,001 - 4,000             | 30                  | 23                 | - | 7  | 11              | 6        | 4        | 9     |
| 4,001 - 5,000             | 12                  | 9                  | - | 3  | 4               | 4        | 1        | 3     |
| Over \$ 5,000             | 5                   | 3                  | - | 2  | 2               | 1        | -        | 2     |
|                           | 168                 | 144                | 5 | 19 | 76              | 38       | 16       | 38    |

**West Virginia Consolidated Public Retirement Board**

*Statistical Section*

*Retired Members by Type of Benefit*

**Municipal Police Officers & Firefighters Retirement System**

| Amount of Monthly Benefit | Number of Retirants | Type of Retirement |          |          | Option Selected |          |          |          |
|---------------------------|---------------------|--------------------|----------|----------|-----------------|----------|----------|----------|
|                           |                     | A                  | B        | C        | Maximum         | Option 1 | Option 2 | Other    |
| \$ 1 - 1,000              | -                   | -                  | -        | -        | -               | -        | -        | -        |
| 1,001 - 2,000             | -                   | -                  | -        | -        | -               | -        | -        | -        |
| 2,001 - 3,000             | -                   | -                  | -        | -        | -               | -        | -        | -        |
| 3,001 - 4,000             | 1                   | -                  | -        | 1        | -               | -        | -        | 1        |
| 4,001 - 5,000             | -                   | -                  | -        | -        | -               | -        | -        | -        |
| Over \$ 5,000             | -                   | -                  | -        | -        | -               | -        | -        | -        |
|                           | <b>1</b>            | <b>-</b>           | <b>-</b> | <b>1</b> | <b>-</b>        | <b>-</b> | <b>-</b> | <b>1</b> |

**Natural Resources Police Officers Retirement System**

| Amount of Monthly Benefit | Number of Retirants | Type of Retirement |          |          | Option Selected |          |          |          |
|---------------------------|---------------------|--------------------|----------|----------|-----------------|----------|----------|----------|
|                           |                     | A                  | B        | C        | Maximum         | Option 1 | Option 2 | Other    |
| \$ 1 - 1,000              | -                   | -                  | -        | -        | -               | -        | -        | -        |
| 1,001 - 2,000             | -                   | -                  | -        | -        | -               | -        | -        | -        |
| 2,001 - 3,000             | -                   | -                  | -        | -        | -               | -        | -        | -        |
| 3,001 - 4,000             | 4                   | 4                  | -        | -        | 1               | 3        | -        | 1        |
| 4,001 - 5,000             | 4                   | 4                  | -        | -        | 1               | 2        | -        | -        |
| Over \$ 5,000             | 1                   | 1                  | -        | -        | 1               | -        | -        | -        |
|                           | <b>9</b>            | <b>9</b>           | <b>-</b> | <b>-</b> | <b>3</b>        | <b>5</b> | <b>-</b> | <b>1</b> |

Type of Retirement

- A - Service
- B - Survivor Benefit
- C - Disability

Option

- Maximum - Life Annuity
- Option 1 - 100% Joint Survivorship
- Option 2 - 50% Joint Survivorship
- Other

# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Largest Employers

#### Public Employees Retirement System

| Top Employers          | June 30, 2023   |      |                     | June 30, 2013   |      |                     |
|------------------------|-----------------|------|---------------------|-----------------|------|---------------------|
|                        | Covered Members | Rank | Percentage of Total | Covered Members | Rank | Percentage of Total |
| State of West Virginia | 22,710          | 1    | 63.25%              | 24,269          | 1    | 66.24%              |
| All other employers    | 13,195          |      | 36.75%              | 12,368          |      | 33.76%              |
|                        | 35,905          |      | 100.00%             | 36,637          |      | 100.00%             |

#### Teachers Retirement System

| Top Employers                        | June 30, 2023   |      |                     | June 30, 2013   |      |                     |
|--------------------------------------|-----------------|------|---------------------|-----------------|------|---------------------|
|                                      | Covered Members | Rank | Percentage of Total | Covered Members | Rank | Percentage of Total |
| Kanawha County Board of Education    | 3,192           | 1    | 8.96%               | 3,254           | 1    | 9.14%               |
| Berkeley County Board of Education   | 2,394           | 2    | 6.71%               | 2,092           | 2    | 5.88%               |
| Cabell County Board of Education     | 1,648           | 3    | 4.62%               | 1,401           | 5    | 3.94%               |
| Wood County Board of Education       | 1,554           | 4    | 4.36%               | 1,558           | 3    | 4.38%               |
| Monongalia County Board of Education | 1,553           | 5    | 4.35%               | 1,251           | 7    | 3.51%               |
| Raleigh County Board of Education    | 1,433           | 6    | 4.02%               | 1,446           | 4    | 4.06%               |
| Harrison County Board of Education   | 1,370           | 7    | 3.84%               | 1,393           | 6    | 3.91%               |
| Mercer County Board of Education     | 1,162           | 8    | 3.26%               | 1,177           | 8    | 3.31%               |
| Putnam County Board of Education     | 1,134           | 9    | 3.18%               | 1,000           | 10   | 2.81%               |
| Jefferson County Board of Education  | 1,046           | 10   | 2.93%               | 1,004           | 9    | 2.82%               |
| Total Top Employers                  | 16,486          |      | 46.21%              | 15,576          |      | 43.76%              |
| All other employers                  | 19,194          |      | 53.79%              | 20,017          |      | 56.24%              |
|                                      | 35,680          |      | 100.00%             | 35,593          |      | 100.00%             |

#### State Police Death, Disability, and Retirement System

| Top Employers          | June 30, 2023   |      |                     | June 30, 2013   |      |                     |
|------------------------|-----------------|------|---------------------|-----------------|------|---------------------|
|                        | Covered Members | Rank | Percentage of Total | Covered Members | Rank | Percentage of Total |
| State of West Virginia | 3               | 1    | 100.00%             | 99              | 1    | 100.00%             |
| All other employers    | -               |      | -                   | -               |      | 0.00%               |
|                        | 3               |      | 100.00%             | 99              |      | 100.00%             |

# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Largest Employers

#### State Police Retirement System

| Top Employers          | June 30, 2023   |      |                     | June 30, 2013   |      |                     |
|------------------------|-----------------|------|---------------------|-----------------|------|---------------------|
|                        | Covered Members | Rank | Percentage of Total | Covered Members | Rank | Percentage of Total |
| State of West Virginia | 656             | 1    | 100.00%             | 558             | 1    | 100.00%             |
| All other employers    | -               |      | -                   | -               |      | -                   |
|                        | 656             |      | 100.00%             | 558             |      | 100.00%             |

#### Deputy Sheriffs Retirement System

| Top Employers       | June 30, 2023   |      |                     | June 30, 2013   |      |                     |
|---------------------|-----------------|------|---------------------|-----------------|------|---------------------|
|                     | Covered Members | Rank | Percentage of Total | Covered Members | Rank | Percentage of Total |
| Kanawha County      | 103             | 1    | 8.60%               | 103             | 1    | 10.40%              |
| Berkeley County     | 71              | 2    | 5.93%               | 56              | 2    | 5.66%               |
| Raleigh County      | 58              | 3    | 4.84%               | 46              | 3    | 4.65%               |
| Harrison County     | 56              | 4    | 4.67%               | 42              | 5    | 4.24%               |
| Monongalia County   | 46              | 5    | 3.84%               | 43              | 4    | 4.34%               |
| Putnam County       | 45              | 6    | 3.76%               | 42              | 6    | 4.24%               |
| Wood County         | 40              | 7    | 3.34%               | 34              | 9    | 3.43%               |
| Cabell County       | 39              | 8    | 3.26%               | 38              | 8    | 3.84%               |
| Fayette County      | 37              | 9    | 3.09%               | 39              | 7    | 3.94%               |
| Ohio County         | 35              | 10   | 2.92%               | 33              | 10   | 3.34%               |
| Total Top Employers | 530             |      | 44.25%              | 476             |      | 48.08%              |
| All other employers | 668             |      | 55.75%              | 514             |      | 51.92%              |
|                     | 1,198           |      | 100.00%             | 990             |      | 100.00%             |

#### Judges Retirement System

| Top Employers          | June 30, 2023   |      |                     | June 30, 2013   |      |                     |
|------------------------|-----------------|------|---------------------|-----------------|------|---------------------|
|                        | Covered Members | Rank | Percentage of Total | Covered Members | Rank | Percentage of Total |
| State of West Virginia | 42              | 1    | 100.00%             | 50              | 1    | 100.00%             |
| All other employers    | -               |      | -                   | -               |      | -                   |
|                        | 42              |      | 100.00%             | 50              |      | 100.00%             |

**West Virginia Consolidated Public Retirement Board**  
**Statistical Section**  
**Largest Employers**

**Emergency Medical Services Retirement System**

| Top Employers                              | June 30, 2023   |      |                     | June 30, 2013   |      |                     |
|--|-----------------|------|---------------------|-----------------|------|---------------------|
|  | Covered Members | Rank | Percentage of Total | Covered Members | Rank | Percentage of Total |
| Cabell County Emergency Medical Services   | 201             | 1    | 20.28%              | 118             | 2    | 22.56%              |
| Kanawha County Emergency Ambulance         | 186             | 2    | 18.77%              | 192             | 1    | 36.70%              |
| Berkeley County Emergency Ambulance Auth   | 74              | 3    | 7.47%               |                 |      |                     |
| Grant County Ambulance                     | 53              | 4    | 5.35%               |                 |      |                     |
| Jefferson County Emergency Services Agency | 48              | 5    | 4.84%               |                 |      |                     |
| <b>Total Top Employers</b>                 | <b>562</b>      |      | <b>56.71%</b>       | <b>310</b>      |      | <b>59.26%</b>       |
| All other employers                        | 429             |      | 43.29%              | 213             |      | 40.74%              |
|  | <b>991</b>      |      | <b>100.00%</b>      | <b>523</b>      |      | <b>100.00%</b>      |

**Municipal Police Officers and Firefighters Retirement System**

| Top Employers                   | June 30, 2023   |      |                     | June 30, 2013   |      |                     |
|---------------------------------|-----------------|------|---------------------|-----------------|------|---------------------|
|                                 | Covered Members | Rank | Percentage of Total | Covered Members | Rank | Percentage of Total |
| City of Charleston Firefighters | 118             | 1    | 16.25%              | -               |      |                     |
| City of Charleston Police       | 101             | 2    | 13.91%              | 18              | 2    | 37.50%              |
| City of Huntington Police       | 57              | 3    | 7.85%               | 27              | 1    | 56.25%              |
| City of Wheeling Firefighters   | 57              | 4    | 7.85%               |                 |      |                     |
| City of Wheeling Police         | 48              | 5    | 6.61%               |                 |      |                     |
| <b>Total Top Employers</b>      | <b>381</b>      |      | <b>52.47%</b>       | <b>45</b>       |      | <b>93.75%</b>       |
| All other employers             | 345             |      | 47.53%              | 3               |      | 6.25%               |
|                                 | <b>726</b>      |      | <b>100.00%</b>      | <b>48</b>       |      | <b>100.00%</b>      |

**Natural Resources Police Officers Retirement System\***

| Top Employers          | June 30, 2021   |      |                     | June 30, 2012   |      |                     |
|------------------------|-----------------|------|---------------------|-----------------|------|---------------------|
|                        | Covered Members | Rank | Percentage of Total | Covered Members | Rank | Percentage of Total |
| State of West Virginia | 116             | 1    | 100.00%             | n/a             | n/a  | n/a                 |
| All other employers    | -               |      | -                   | n/a             |      | n/a                 |
|                        | <b>116</b>      |      | <b>100.00%</b>      | <b>n/a</b>      |      | <b>n/a</b>          |

\* The NRPORS was established in January 2021.

# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Average Monthly Benefit Payments

The following schedules provide information on the average monthly benefit payments. These schedules exclude participants retiring with a reduced early retirement benefit with less than 10 years of service.

#### Public Employees Retirement System

|  | Years of Credited Service |           |           |           |           |
|--|---------------------------|-----------|-----------|-----------|-----------|
|  | 10 - 14                   | 15 - 19   | 20 - 24   | 25 - 29   | 30+       |
| <b>For the Year Ended June 30, 2023:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 597                    | \$ 871    | \$ 1,217  | \$ 1,606  | \$ 2,522  |
| Average final average salary             | \$ 31,176                 | \$ 33,649 | \$ 36,870 | \$ 39,694 | \$ 46,621 |
| Number of benefit recipients             | 4,665                     | 4,426     | 4,914     | 4,778     | 8,850     |
| <b>For the Year Ended June 30, 2022:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 586                    | \$ 847    | \$ 1,186  | \$ 1,572  | \$ 2,479  |
| Average final average salary             | \$ 30,200                 | \$ 32,503 | \$ 35,779 | \$ 38,770 | \$ 45,714 |
| Number of benefit recipients             | 4,620                     | 4,396     | 4,875     | 4,742     | 8,724     |
| <b>For the Year Ended June 30, 2021:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 569                    | \$ 825    | \$ 1,147  | \$ 1,533  | \$ 2,431  |
| Average final average salary             | \$ 28,988                 | \$ 31,436 | \$ 34,510 | \$ 37,669 | \$ 44,737 |
| Number of benefit recipients             | 4,575                     | 4,341     | 4,771     | 4,682     | 8,518     |
| <b>For the Year Ended June 30, 2020:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 560                    | \$ 810    | \$ 1,119  | \$ 1,507  | \$ 2,383  |
| Average final average salary             | \$ 28,080                 | \$ 30,541 | \$ 33,400 | \$ 36,863 | \$ 46,815 |
| Number of benefit recipients             | 4,530                     | 4,288     | 4,666     | 4,606     | 8,292     |
| <b>For the Year Ended June 30, 2019:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 550                    | \$ 791    | \$ 1,094  | \$ 1,477  | \$ 2,729  |
| Average final average salary             | \$ 27,186                 | \$ 29,558 | \$ 32,418 | \$ 36,048 | \$ 46,159 |
| Number of benefit recipients             | 4,462                     | 4,238     | 4,636     | 4,594     | 8,095     |
| <b>For the Year Ended June 30, 2018:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 543                    | \$ 775    | \$ 1,078  | \$ 1,466  | \$ 2,317  |
| Average final average salary             | \$ 26,402                 | \$ 28,543 | \$ 31,614 | \$ 35,540 | \$ 42,311 |
| Number of benefit recipients             | 4,441                     | 4,202     | 4,555     | 4,548     | 7,877     |
| <b>For the Year Ended June 30, 2017:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 547                    | \$ 764    | \$ 1,070  | \$ 1,456  | \$ 2,299  |
| Average final average salary             | \$ 27,350                 | \$ 26,965 | \$ 29,182 | \$ 32,356 | \$ 36,300 |
| Number of benefit recipients             | 4,512                     | 4,049     | 4,448     | 4,295     | 6,902     |
| <b>For the Year Ended June 30, 2016:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 531                    | \$ 743    | \$ 1,037  | \$ 1,392  | \$ 2,274  |
| Average final average salary             | \$ 26,550                 | \$ 26,224 | \$ 28,282 | \$ 30,933 | \$ 35,905 |
| Number of benefit recipients             | 4,471                     | 3,998     | 4,309     | 4,176     | 6,484     |
| <b>For the Year Ended June 30, 2015:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 522                    | \$ 733    | \$ 1,019  | \$ 1,386  | \$ 2,204  |
| Average final average salary             | \$ 26,100                 | \$ 25,871 | \$ 27,791 | \$ 30,800 | \$ 34,800 |
| Number of benefit recipients             | 4,438                     | 3,934     | 4,296     | 4,107     | 6,390     |
| <b>For the Year Ended June 30, 2014:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 547                    | \$ 760    | \$ 1,055  | \$ 1,440  | \$ 2,281  |
| Average final average salary             | \$ 27,350                 | \$ 26,824 | \$ 28,773 | \$ 32,000 | \$ 36,016 |
| Number of benefit recipients             | 4,245                     | 3,770     | 7,165     | 3,993     | 6,258     |

# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Average Monthly Benefit Payments

#### Teachers Retirement System

|  | Years of Credited Service |           |           |           |           |
|--|---------------------------|-----------|-----------|-----------|-----------|
|  | 10 - 14                   | 15 - 19   | 20 - 24   | 25 - 29   | 30+       |
| <b>For the Year Ended June 30, 2023:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 548                    | \$ 844    | \$ 1,169  | \$ 1,580  | \$ 2,784  |
| Average final average salary             | \$ 28,016                 | \$ 30,045 | \$ 31,221 | \$ 34,749 | \$ 47,212 |
| Number of benefit recipients             | 2,741                     | 3,441     | 4,450     | 4,984     | 20,474    |
| <b>For the Year Ended June 30, 2022:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 533                    | \$ 819    | \$ 1,138  | \$ 1,548  | \$ 2,745  |
| Average final average salary             | \$ 26,717                 | \$ 28,581 | \$ 29,673 | \$ 33,375 | \$ 46,229 |
| Number of benefit recipients             | 2,671                     | 3,400     | 4,456     | 5,091     | 20,653    |
| <b>For the Year Ended June 30, 2021:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 517                    | \$ 787    | \$ 1,105  | \$ 1,516  | \$ 2,705  |
| Average final average salary             | \$ 25,327                 | \$ 26,910 | \$ 28,177 | \$ 32,173 | \$ 45,247 |
| Number of benefit recipients             | 2,577                     | 3,293     | 4,434     | 5,181     | 20,676    |
| <b>For the Year Ended June 30, 2020:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 503                    | \$ 763    | \$ 1,080  | \$ 1,491  | \$ 2,665  |
| Average final average salary             | \$ 24,025                 | \$ 25,418 | \$ 26,939 | \$ 31,067 | \$ 44,093 |
| Number of benefit recipients             | 2,502                     | 3,197     | 4,397     | 5,211     | 20,528    |
| <b>For the Year Ended June 30, 2019:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 485                    | \$ 739    | \$ 1,054  | \$ 1,468  | \$ 3,096  |
| Average final average salary             | \$ 22,542                 | \$ 23,782 | \$ 25,525 | \$ 30,212 | \$ 42,789 |
| Number of benefit recipients             | 2,410                     | 3,154     | 4,440     | 5,258     | 20,383    |
| <b>For the Year Ended June 30, 2018:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 479                    | \$ 728    | \$ 1,040  | \$ 1,460  | \$ 2,596  |
| Average final average salary             | \$ 21,520                 | \$ 22,553 | \$ 24,240 | \$ 29,356 | \$ 42,331 |
| Number of benefit recipients             | 2,400                     | 3,157     | 4,434     | 5,274     | 20,051    |
| <b>For the Year Ended June 30, 2017:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 475                    | \$ 719    | \$ 1,048  | \$ 1,488  | \$ 2,572  |
| Average final average salary             | \$ 23,750                 | \$ 25,376 | \$ 28,582 | \$ 33,067 | \$ 40,611 |
| Number of benefit recipients             | 2,476                     | 3,199     | 4,674     | 5,383     | 18,717    |
| <b>For the Year Ended June 30, 2016:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 443                    | \$ 692    | \$ 1,021  | \$ 1,437  | \$ 2,486  |
| Average final average salary             | \$ 22,150                 | \$ 24,424 | \$ 27,845 | \$ 31,933 | \$ 39,253 |
| Number of benefit recipients             | 2,402                     | 3,191     | 4,605     | 5,359     | 17,974    |
| <b>For the Year Ended June 30, 2015:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 432                    | \$ 668    | \$ 1,004  | \$ 1,414  | \$ 2,453  |
| Average final average salary             | \$ 21,600                 | \$ 23,576 | \$ 27,382 | \$ 31,422 | \$ 38,732 |
| Number of benefit recipients             | 2,352                     | 3,187     | 4,728     | 5,351     | 17,680    |
| <b>For the Year Ended June 30, 2014:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 452                    | \$ 695    | \$ 1,026  | \$ 1,446  | \$ 2,481  |
| Average final average salary             | \$ 22,600                 | \$ 24,529 | \$ 27,982 | \$ 32,133 | \$ 39,174 |
| Number of benefit recipients             | 2,224                     | 3,020     | 4,575     | 5,200     | 17,445    |



# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Average Monthly Benefit Payments

#### State Police Death, Disability, and Retirement System

|  | Years of Credited Service |           |           |           |           |
|--|---------------------------|-----------|-----------|-----------|-----------|
|  | 10 - 14                   | 15 - 19   | 20 - 24   | 25 - 29   | 30+       |
| <b>For the Year Ended June 30, 2023:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 6,276                  | \$ 6,620  | \$ 5,169  | \$ 5,796  | \$ 6,998  |
| Average final average salary             | \$ 97,808                 | \$ 76,019 | \$ 46,991 | \$ 43,607 | \$ 50,894 |
| Number of benefit recipients             | 27                        | 26        | 85        | 486       | 107       |
| <b>For the Year Ended June 30, 2022:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 6,326                  | \$ 6,384  | \$ 4,971  | \$ 5,594  | \$ 6,707  |
| Average final average salary             | \$ 98,587                 | \$ 73,309 | \$ 45,191 | \$ 42,087 | \$ 48,778 |
| Number of benefit recipients             | 27                        | 26        | 86        | 497       | 107       |
| <b>For the Year Ended June 30, 2021:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 6,097                  | \$ 5,960  | \$ 4,839  | \$ 5,425  | \$ 6,416  |
| Average final average salary             | \$ 95,018                 | \$ 68,441 | \$ 43,991 | \$ 40,813 | \$ 46,662 |
| Number of benefit recipients             | 27                        | 28        | 84        | 494       | 113       |
| <b>For the Year Ended June 30, 2020:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 5,877                  | \$ 5,745  | \$ 4,631  | \$ 5,263  | \$ 6,156  |
| Average final average salary             | \$ 91,589                 | \$ 65,972 | \$ 42,100 | \$ 39,596 | \$ 44,770 |
| Number of benefit recipients             | 27                        | 28        | 86        | 499       | 117       |
| <b>For the Year Ended June 30, 2019:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 5,664                  | \$ 5,541  | \$ 4,487  | \$ 5,104  | \$ 5,776  |
| Average final average salary             | \$ 88,270                 | \$ 63,629 | \$ 40,791 | \$ 38,400 | \$ 42,007 |
| Number of benefit recipients             | 27                        | 28        | 87        | 502       | 118       |
| <b>For the Year Ended June 30, 2018:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 5,459                  | \$ 5,270  | \$ 4,337  | \$ 4,928  | \$ 5,729  |
| Average final average salary             | \$ 85,075                 | \$ 60,517 | \$ 39,427 | \$ 37,076 | \$ 41,665 |
| Number of benefit recipients             | 27                        | 30        | 86        | 483       | 119       |
| <b>For the Year Ended June 30, 2017:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 5,307                  | \$ 5,356  | \$ 4,332  | \$ 5,069  | \$ 5,707  |
| Average final average salary             | \$ 82,706                 | \$ 61,504 | \$ 39,382 | \$ 38,137 | \$ 41,505 |
| Number of benefit recipients             | 29                        | 27        | 105       | 450       | 83        |
| <b>For the Year Ended June 30, 2016:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 5,276                  | \$ 5,262  | \$ 4,109  | \$ 4,747  | \$ 5,466  |
| Average final average salary             | \$ 82,223                 | \$ 60,425 | \$ 37,355 | \$ 35,714 | \$ 39,753 |
| Number of benefit recipients             | 29                        | 27        | 103       | 449       | 84        |
| <b>For the Year Ended June 30, 2015:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 5,224                  | \$ 4,965  | \$ 3,910  | \$ 4,574  | \$ 5,277  |
| Average final average salary             | \$ 81,413                 | \$ 57,014 | \$ 35,545 | \$ 34,413 | \$ 38,378 |
| Number of benefit recipients             | 30                        | 27        | 111       | 446       | 85        |
| <b>For the Year Ended June 30, 2014:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 5,202                  | \$ 5,097  | \$ 3,870  | \$ 4,611  | \$ 5,153  |
| Average final average salary             | \$ 81,070                 | \$ 58,530 | \$ 35,182 | \$ 34,691 | \$ 37,476 |
| Number of benefit recipients             | 24                        | 22        | 89        | 423       | 86        |

# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Average Monthly Benefit Payments

#### State Police Retirement System

|  | Years of Credited Service |           |           |           |           |
|--|---------------------------|-----------|-----------|-----------|-----------|
|  | 10 - 14                   | 15 - 19   | 20 - 24   | 25 - 29   | 30+       |
| <b>For the Year Ended June 30, 2023:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 3,183                  | \$ 3,847  | \$ 3,406  | \$ 4,002  | \$ 5,630  |
| Average final average salary             | \$ 42,965                 | \$ 55,535 | \$ 61,277 | \$ 67,032 | \$ 76,179 |
| Number of benefit recipients             | 9                         | 7         | 15        | 48        | 61        |
| <b>For the Year Ended June 30, 2022:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 3,208                  | \$ 3,810  | \$ 3,039  | \$ 4,002  | \$ 5,181  |
| Average final average salary             | \$ 41,520                 | \$ 55,535 | \$ 60,307 | \$ 67,115 | \$ 73,089 |
| Number of benefit recipients             | 8                         | 7         | 12        | 42        | 39        |
| <b>For the Year Ended June 30, 2021:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 3,179                  | \$ 4,011  | \$ 3,033  | \$ 4,037  | \$ 4,975  |
| Average final average salary             | \$ 41,520                 | \$ 55,284 | \$ 60,307 | \$ 67,507 | \$ 70,849 |
| Number of benefit recipients             | 8                         | 6         | 12        | 35        | 25        |
| <b>For the Year Ended June 30, 2020:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 2,977                  | \$ 4,204  | \$ 3,101  | \$ 4,014  | \$ 4,842  |
| Average final average salary             | \$ 92,790                 | \$ 55,005 | \$ 60,885 | \$ 65,026 | \$ 63,259 |
| Number of benefit recipients             | 7                         | 5         | 11        | 18        | 8         |
| <b>For the Year Ended June 30, 2019:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 3,186                  | \$ 4,163  | \$ 3,193  | \$ 3,303  | \$ 4,375  |
| Average final average salary             | \$ 99,304                 | \$ 95,610 | \$ 58,055 | \$ 49,700 | \$ 63,636 |
| Number of benefit recipients             | 6                         | 5         | 3         | 12        | 6         |
| <b>For the Year Ended June 30, 2018:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 3,159                  | \$ 4,123  | \$ 3,694  | \$ 3,379  | \$ 4,298  |
| Average final average salary             | \$ 98,462                 | \$ 94,691 | \$ 67,164 | \$ 50,844 | \$ 62,516 |
| Number of benefit recipients             | 6                         | 5         | 6         | 7         | 3         |
| <b>For the Year Ended June 30, 2017:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 3,537                  | \$ 3,683  | \$ 3,031  | \$ 2,953  | \$ 3,998  |
| Average final average salary             | \$ 110,244                | \$ 84,586 | \$ 55,109 | \$ 44,434 | \$ 58,153 |
| Number of benefit recipients             | 3                         | 4         | 3         | 7         | 2         |
| <b>For the Year Ended June 30, 2016:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 3,489                  | \$ 3,718  | \$ 3,015  | \$ 3,058  | \$ 3,998  |
| Average final average salary             | \$ 108,748                | \$ 85,389 | \$ 54,818 | \$ 46,014 | \$ 58,153 |
| Number of benefit recipients             | 3                         | 3         | 3         | 2         | 2         |
| <b>For the Year Ended June 30, 2015:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 3,468                  | \$ 4,130  | \$ 3,034  | \$ 3,058  | \$ 4,469  |
| Average final average salary             | \$ 108,094                | \$ 94,852 | \$ 55,164 | \$ 46,014 | \$ 65,004 |
| Number of benefit recipients             | 3                         | 2         | 2         | 2         | 1         |
| <b>For the Year Ended June 30, 2014:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 2,601                  | \$ 4,131  | \$ 3,034  | \$ 3,058  | \$ 4,469  |
| Average final average salary             | \$ 81,070                 | \$ 94,875 | \$ 55,164 | \$ 46,014 | \$ 65,004 |
| Number of benefit recipients             | 4                         | 2         | 2         | 2         | 1         |

# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Average Monthly Benefit Payments

#### Deputy Sheriffs Retirement System

|  | Years of Credited Service |           |           |           |           |
|--|---------------------------|-----------|-----------|-----------|-----------|
|  | 10 - 14                   | 15 - 19   | 20 - 24   | 25 - 29   | 30+       |
| <b>For the Year Ended June 30, 2023:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,051                  | \$ 2,108  | \$ 2,036  | \$ 2,276  | \$ 3,120  |
| Average final average salary             | \$ 33,365                 | \$ 34,149 | \$ 41,956 | \$ 44,265 | \$ 50,103 |
| Number of benefit recipients             | 23                        | 48        | 115       | 139       | 208       |
| <b>For the Year Ended June 30, 2022:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,081                  | \$ 2,136  | \$ 1,964  | \$ 2,208  | \$ 3,051  |
| Average final average salary             | \$ 32,155                 | \$ 33,802 | \$ 40,475 | \$ 42,808 | \$ 48,928 |
| Number of benefit recipients             | 23                        | 47        | 102       | 135       | 196       |
| <b>For the Year Ended June 30, 2021:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,195                  | \$ 2,083  | \$ 2,006  | \$ 2,333  | \$ 3,091  |
| Average final average salary             | \$ 31,595                 | \$ 34,112 | \$ 41,169 | \$ 42,439 | \$ 48,585 |
| Number of benefit recipients             | 25                        | 47        | 130       | 124       | 150       |
| <b>For the Year Ended June 30, 2020:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,198                  | \$ 1,888  | \$ 1,954  | \$ 2,267  | \$ 2,986  |
| Average final average salary             | \$ 29,839                 | \$ 32,584 | \$ 40,255 | \$ 41,045 | \$ 46,914 |
| Number of benefit recipients             | 21                        | 43        | 122       | 118       | 134       |
| <b>For the Year Ended June 30, 2019:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,158                  | \$ 1,856  | \$ 1,935  | \$ 2,240  | \$ 2,769  |
| Average final average salary             | \$ 34,405                 | \$ 38,925 | \$ 31,359 | \$ 29,579 | \$ 32,908 |
| Number of benefit recipients             | 19                        | 40        | 109       | 114       | 129       |
| <b>For the Year Ended June 30, 2018:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,136                  | \$ 1,807  | \$ 1,680  | \$ 1,914  | \$ 2,545  |
| Average final average salary             | \$ 33,752                 | \$ 34,147 | \$ 38,653 | \$ 40,547 | \$ 45,086 |
| Number of benefit recipients             | 16                        | 33        | 78        | 108       | 151       |
| <b>For the Year Ended June 30, 2017:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,535                  | \$ 1,537  | \$ 1,645  | \$ 1,810  | \$ 2,549  |
| Average final average salary             | \$ 45,607                 | \$ 48,220 | \$ 39,879 | \$ 35,753 | \$ 45,316 |
| Number of benefit recipients             | 18                        | 29        | 67        | 105       | 135       |
| <b>For the Year Ended June 30, 2016:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,479                  | \$ 1,541  | \$ 1,613  | \$ 1,757  | \$ 2,487  |
| Average final average salary             | \$ 43,943                 | \$ 48,345 | \$ 39,103 | \$ 34,706 | \$ 44,213 |
| Number of benefit recipients             | 16                        | 26        | 64        | 98        | 129       |
| <b>For the Year Ended June 30, 2015:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,428                  | \$ 1,503  | \$ 1,570  | \$ 1,729  | \$ 2,424  |
| Average final average salary             | \$ 42,427                 | \$ 47,153 | \$ 38,061 | \$ 34,153 | \$ 43,093 |
| Number of benefit recipients             | 14                        | 25        | 62        | 95        | 121       |
| <b>For the Year Ended June 30, 2014:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,333                  | \$ 1,533  | \$ 1,579  | \$ 1,789  | \$ 2,456  |
| Average final average salary             | \$ 39,605                 | \$ 48,094 | \$ 38,279 | \$ 35,338 | \$ 43,662 |
| Number of benefit recipients             | 15                        | 24        | 64        | 94        | 124       |

**West Virginia Consolidated Public Retirement Board**  
**Statistical Section**  
**Average Monthly Benefit Payments**

**Judges Retirement System**

|  | Years of Credited Service |            |            |            |            |
|--|---------------------------|------------|------------|------------|------------|
|  | 10 - 14                   | 15 - 19    | 20 - 24    | 25 - 29    | 30+        |
| <b>For the Year Ended June 30, 2023:</b> |                           |            |            |            |            |
| Average monthly benefit                  | \$ 4,410                  | \$ 6,927   | \$ 7,694   | \$ 7,709   | \$ 7,270   |
| Average final average salary             | \$ 67,200                 | \$ 93,776  | \$ 115,408 | \$ 127,424 | \$ 116,240 |
| Number of benefit recipients             | 1                         | 15         | 24         | 12         | 9          |
| <b>For the Year Ended June 30, 2022:</b> |                           |            |            |            |            |
| Average monthly benefit                  | \$ 4,410                  | \$ 6,592   | \$ 7,574   | \$ 7,563   | \$ 7,270   |
| Average final average salary             | \$ 70,560                 | \$ 105,472 | \$ 121,184 | \$ 121,008 | \$ 118,176 |
| Number of benefit recipients             | 1                         | 17         | 24         | 10         | 9          |
| <b>For the Year Ended June 30, 2021:</b> |                           |            |            |            |            |
| Average monthly benefit                  | \$ 4,200                  | \$ 6,345   | \$ 7,335   | \$ 7,011   | \$ 6,719   |
| Average final average salary             | \$ 67,200                 | \$ 101,520 | \$ 117,360 | \$ 112,176 | \$ 107,504 |
| Number of benefit recipients             | 1                         | 20         | 23         | 9          | 9          |
| <b>For the Year Ended June 30, 2020:</b> |                           |            |            |            |            |
| Average monthly benefit                  | \$ 4,200                  | \$ 6,451   | \$ 7,335   | \$ 7,098   | \$ 6,719   |
| Average final average salary             | \$ 67,200                 | \$ 103,216 | \$ 117,360 | \$ 113,568 | \$ 107,504 |
| Number of benefit recipients             | 1                         | 19         | 23         | 10         | 9          |
| <b>For the Year Ended June 30, 2019:</b> |                           |            |            |            |            |
| Average monthly benefit                  | \$ 4,200                  | \$ 6,253   | \$ 7,357   | \$ 7,465   | \$ 6,914   |
| Average final average salary             | \$ 67,200                 | \$ 100,048 | \$ 117,712 | \$ 119,440 | \$ 110,624 |
| Number of benefit recipients             | 1                         | 21         | 24         | 10         | 7          |
| <b>For the Year Ended June 30, 2018:</b> |                           |            |            |            |            |
| Average monthly benefit                  | \$ 4,200                  | \$ 6,160   | \$ 7,335   | \$ 7,419   | \$ 6,914   |
| Average final average salary             | \$ 67,200                 | \$ 98,560  | \$ 117,360 | \$ 118,704 | \$ 110,624 |
| Number of benefit recipients             | 1                         | 22         | 23         | 9          | 7          |
| <b>For the Year Ended June 30, 2017:</b> |                           |            |            |            |            |
| Average monthly benefit                  | \$ 4,200                  | \$ 5,581   | \$ 6,841   | \$ 7,363   | \$ 7,265   |
| Average final average salary             | \$ 67,200                 | \$ 89,296  | \$ 109,456 | \$ 117,808 | \$ 116,240 |
| Number of benefit recipients             | 1                         | 25         | 20         | 8          | 5          |
| <b>For the Year Ended June 30, 2016:</b> |                           |            |            |            |            |
| Average monthly benefit                  | \$ 4,200                  | \$ 5,600   | \$ 6,847   | \$ 7,442   | \$ 7,265   |
| Average final average salary             | \$ 67,200                 | \$ 89,600  | \$ 109,552 | \$ 119,072 | \$ 116,240 |
| Number of benefit recipients             | 1                         | 26         | 17         | 8          | 5          |
| <b>For the Year Ended June 30, 2015:</b> |                           |            |            |            |            |
| Average monthly benefit                  | \$ 4,200                  | \$ 5,607   | \$ 6,864   | \$ 7,789   | \$ 7,265   |
| Average final average salary             | \$ 67,200                 | \$ 89,712  | \$ 109,824 | \$ 124,624 | \$ 116,240 |
| Number of benefit recipients             | 1                         | 26         | 15         | 8          | 5          |
| <b>For the Year Ended June 30, 2014:</b> |                           |            |            |            |            |
| Average monthly benefit                  | \$ 4,200                  | \$ 5,713   | \$ 7,257   | \$ 7,953   | \$ 7,265   |
| Average final average salary             | \$ 67,200                 | \$ 91,408  | \$ 116,112 | \$ 127,248 | \$ 116,240 |
| Number of benefit recipients             | 1                         | 23         | 15         | 8          | 5          |

# West Virginia Consolidated Public Retirement Board

## Statistical Section

### Average Monthly Benefit Payments

#### Emergency Medical Services Retirement System

|  | Years of Credited Service |           |           |           |           |
|--|---------------------------|-----------|-----------|-----------|-----------|
|  | 10 - 14                   | 15 - 19   | 20 - 24   | 25 - 29   | 30+       |
| <b>For the Year Ended June 30, 2023:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 2,418                  | \$ 1,930  | \$ 2,280  | \$ 2,682  | \$ 3,313  |
| Average final average salary             | \$ 37,171                 | \$ 43,870 | \$ 51,158 | \$ 55,844 | \$ 63,596 |
| Number of benefit recipients             | 22                        | 34        | 38        | 36        | 27        |
| <b>For the Year Ended June 30, 2022:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 2,185                  | \$ 1,939  | \$ 2,217  | \$ 2,641  | \$ 3,292  |
| Average final average salary             | \$ 38,544                 | \$ 43,496 | \$ 50,042 | \$ 52,818 | \$ 63,607 |
| Number of benefit recipients             | 20                        | 31        | 34        | 34        | 27        |
| <b>For the Year Ended June 30, 2021:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 2,015                  | \$ 1,959  | \$ 2,049  | \$ 2,480  | \$ 3,012  |
| Average final average salary             | \$ 37,674                 | \$ 43,541 | \$ 46,313 | \$ 49,382 | \$ 60,984 |
| Number of benefit recipients             | 21                        | 30        | 29        | 28        | 22        |
| <b>For the Year Ended June 30, 2020:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 2,084                  | \$ 2,016  | \$ 2,049  | \$ 2,391  | \$ 3,012  |
| Average final average salary             | \$ 39,092                 | \$ 41,246 | \$ 46,313 | \$ 47,565 | \$ 60,984 |
| Number of benefit recipients             | 18                        | 26        | 29        | 24        | 22        |
| <b>For the Year Ended June 30, 2019:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 2,053                  | \$ 2,038  | \$ 2,068  | \$ 2,333  | \$ 2,985  |
| Average final average salary             | \$ 74,655                 | \$ 52,312 | \$ 41,018 | \$ 37,705 | \$ 43,418 |
| Number of benefit recipients             | 17                        | 22        | 27        | 22        | 19        |
| <b>For the Year Ended June 30, 2018:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,975                  | \$ 2,009  | \$ 1,988  | \$ 2,393  | \$ 2,940  |
| Average final average salary             | \$ 71,818                 | \$ 51,568 | \$ 40,461 | \$ 42,885 | \$ 50,472 |
| Number of benefit recipients             | 15                        | 20        | 22        | 21        | 17        |
| <b>For the Year Ended June 30, 2017:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,933                  | \$ 1,528  | \$ 1,948  | \$ 2,535  | \$ 3,173  |
| Average final average salary             | \$ 70,291                 | \$ 39,221 | \$ 39,647 | \$ 45,430 | \$ 54,472 |
| Number of benefit recipients             | 12                        | 15        | 20        | 21        | 10        |
| <b>For the Year Ended June 30, 2016:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,874                  | \$ 1,596  | \$ 2,012  | \$ 2,274  | \$ 3,176  |
| Average final average salary             | \$ 68,145                 | \$ 40,967 | \$ 40,950 | \$ 40,753 | \$ 54,524 |
| Number of benefit recipients             | 10                        | 12        | 18        | 17        | 10        |
| <b>For the Year Ended June 30, 2015:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,812                  | \$ 1,632  | \$ 2,027  | \$ 2,104  | \$ 3,189  |
| Average final average salary             | \$ 65,891                 | \$ 41,891 | \$ 41,255 | \$ 37,706 | \$ 54,747 |
| Number of benefit recipients             | 10                        | 10        | 16        | 16        | 8         |
| <b>For the Year Ended June 30, 2014:</b> |                           |           |           |           |           |
| Average monthly benefit                  | \$ 1,830                  | \$ 1,775  | \$ 2,114  | \$ 2,038  | \$ 3,057  |
| Average final average salary             | \$ 66,545                 | \$ 45,561 | \$ 43,026 | \$ 41,362 | \$ 52,481 |
| Number of benefit recipients             | 10                        | 10        | 16        | 17        | 9         |

**West Virginia Consolidated Public Retirement Board**  
**Statistical Section**

**Average Monthly Benefit Payments**

**Municipal Police Officers & Firefighters Retirement System**

|  | Years of Credited Service |         |         |         |      |
|--|---------------------------|---------|---------|---------|------|
|  | 10 - 14                   | 15 - 19 | 20 - 24 | 25 - 29 | 30+  |
| <b>For the Year Ended June 30, 2023:</b> |                           |         |         |         |      |
| Average monthly benefit                  | \$ 3,228                  | \$ -    | \$ -    | \$ -    | \$ - |
| Average final average salary             | \$ 43,038                 | \$ -    | \$ -    | \$ -    | \$ - |
| Number of benefit recipients             | 1                         | -       | -       | -       | -    |
| <b>For the Year Ended June 30, 2022:</b> |                           |         |         |         |      |
| Average monthly benefit                  | \$ 3,228                  | \$ -    | \$ -    | \$ -    | \$ - |
| Average final average salary             | \$ 43,038                 | \$ -    | \$ -    | \$ -    | \$ - |
| Number of benefit recipients             | 1                         | -       | -       | -       | -    |
| <b>For the Year Ended June 30, 2021:</b> |                           |         |         |         |      |
| Average monthly benefit                  | \$ 3,228                  | \$ -    | \$ -    | \$ -    | \$ - |
| Average final average salary             | \$ 43,038                 | \$ -    | \$ -    | \$ -    | \$ - |
| Number of benefit recipients             | 1                         | -       | -       | -       | -    |
| <b>For the Year Ended June 30, 2020:</b> |                           |         |         |         |      |
| Average monthly benefit                  | \$ 3,228                  | \$ -    | \$ -    | \$ -    | \$ - |
| Average final average salary             | \$ 43,038                 | \$ -    | \$ -    | \$ -    | \$ - |
| Number of benefit recipients             | 1                         | -       | -       | -       | -    |
| <b>For the Year Ended June 30, 2019:</b> |                           |         |         |         |      |
| Average monthly benefit                  | \$ 3,228                  | \$ -    | \$ -    | \$ -    | \$ - |
| Average final average salary             | \$ 43,038                 | \$ -    | \$ -    | \$ -    | \$ - |
| Number of benefit recipients             | 1                         | -       | -       | -       | -    |
| <b>For the Year Ended June 30, 2018:</b> |                           |         |         |         |      |
| Average monthly benefit                  | \$ 3,228                  | \$ -    | \$ -    | \$ -    | \$ - |
| Average final average salary             | \$ 43,038                 | \$ -    | \$ -    | \$ -    | \$ - |
| Number of benefit recipients             | 1                         | -       | -       | -       | -    |

Note: The MPFRS was established in January 2010 and had no benefits or retirees to report before the year ended June 30, 2018

**Natural Resources Police Officers Retirement System**

|  | Years of Credited Service |         |         |         |           |
|--|---------------------------|---------|---------|---------|-----------|
|  | 10 - 14                   | 15 - 19 | 20 - 24 | 25 - 29 | 30+       |
| <b>For the Year Ended June 30, 2023:</b> |                           |         |         |         |           |
| Average monthly benefit                  | \$ -                      | \$ -    | \$ -    | \$ -    | \$ 4,625  |
| Average final average salary             | \$ -                      | \$ -    | \$ -    | \$ -    | \$ 69,937 |
| Number of benefit recipients             | -                         | -       | -       | -       | 9         |
| <b>For the Year Ended June 30, 2022:</b> |                           |         |         |         |           |
| Average monthly benefit                  | \$ -                      | \$ -    | \$ -    | \$ -    | \$ 4,838  |
| Average final average salary             | \$ -                      | \$ -    | \$ -    | \$ -    | \$ 71,167 |
| Number of benefit recipients             | -                         | -       | -       | -       | 7         |
| <b>For the Year Ended June 30, 2021:</b> |                           |         |         |         |           |
| Average monthly benefit                  | \$ -                      | \$ -    | \$ -    | \$ -    | \$ -      |
| Average final average salary             | \$ -                      | \$ -    | \$ -    | \$ -    | \$ -      |
| Number of benefit recipients             | -                         | -       | -       | -       | -         |

Note: The NRPORS was established in January 2021 and had no benefits or retirees to report before the year ended June 30, 2021.