

**MVRMA**

**Miami Valley Risk Management Association**

**ANNUAL COMPREHENSIVE  
FINANCIAL REPORT  
YEAR ENDED DECEMBER 31, 2022**

**Serving the Cities of Southwest Ohio since 1988**

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**Miami Valley Risk Management Association**

**ANNUAL COMPREHENSIVE FINANCIAL REPORT**  
**YEAR ENDED DECEMBER 31, 2022**

Published June 27, 2023

Prepared by:

Thomas L. Judy, Executive Director



June 27, 2023

President Emily Christian & the Board of Trustees  
Miami Valley Risk Management Association

Re: **MVRMA Annual Comprehensive Financial Report for the Period Ended  
December 31, 2022**

Dear MVRMA President and Members of the MVRMA Board of Trustees:

The Annual Comprehensive Financial Report of the Miami Valley Risk Management Association (MVRMA) for the year ended December 31, 2022, is hereby submitted for your review.

The purpose of this report is to provide complete and reliable information as a basis for making management decisions, as a means for determining compliance with legal requirements, as a means for determining funding adequacy including funding for losses and loss adjustment expense reserves and as a means for demonstrating responsible stewardship over the assets contributed by MVRMA's member cities.

MVRMA staff prepared all statements, schedules and other presentations in this report except the actuarial report included in the Required Supplemental Information (RSI) section. Management assumes full responsibility for the completeness and reliability of the information contained in this report, based upon a comprehensive framework of internal control that it has established for this purpose. 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.

Julian & Grube, Inc., Certified Public Accountants, have issued an unmodified ("clean") opinion on MVRMA's financial statements for the year ended December 31, 2022. The independent auditors' report is included in the front of the Financial Section, which immediately follows the Introductory Section of this report.

Management's Discussion and Analysis (MD&A) immediately follows the independent auditors' report and provides a narrative introduction, overview, and analysis of the basic financial statements. The MD&A complements this letter of transmittal and should be read in conjunction with it.

Following the Financial Section are the Statistical and Actuarial sections. The Statistical Section includes financial trends information, revenue capacity information, demographic and economic information and operating information for the last ten years. The Actuarial Section includes the independent actuary's opinion on the unpaid loss and loss adjustment expense reserves, including incurred but not reported (IBNR) claims and related exhibits.

### **Profile of the Reporting Entity**

MVRMA is a consortium of municipalities located in southwest Ohio which formed an Association under Section 2744.081 of the Ohio Revised Code (ORC) to act collectively in addressing its members' risk management and risk financing needs. It was incorporated on December 1, 1988, with six (6) charter members: the City of Beavercreek, City of Kettering, City of Miamisburg, City of Vandalia, City of West Carrollton and City of Wilmington. As of December 30, 2022, MVRMA had twenty (21) members, with the City of Troy joining in 1989, City of Montgomery in 1990, City of Springdale in 1991, City of Blue Ash and City of Wyoming in 1992, City of the Village of Indian Hill and City of Sidney in 1993, City of Madeira in 1994, City of Tipp City in 1996, City of Mason in 1997, City of Piqua in 2002, with the City of Englewood, City of Bellbrook and City of Centerville joining in 2004 and the City of Fairfield joining in 2019. The Association provides a combination of self-insurance, excess insurance, and reinsurance for its members' property/casualty exposures; administers a claims/litigation management program; provides extensive safety/loss control consulting and training; and acts as a clearing house for risk-related information and financial reporting services for its members.

MVRMA management, under the direction of the Board of Trustees' Finance Committee, annually prepares a budget to provide for operating expenses and loss funding for the upcoming year. Funds available for the payment of claims are segregated by loss year, and claims are paid from the funds collected for the corresponding year of occurrence. Each year's loss funding contribution is determined by an actuarial study conducted by an independent actuary. Should any year's operating expenses or losses exceed that particular year's contributions, the Board of Trustees may transfer funds from the Association's Shock Loss Fund or call for supplementary payments from members, including withdrawn or expelled members, for the years of their membership.

### **Economic Condition and Outlook**

MVRMA is only indirectly affected by the state of the local economy; however, the Association's members are more directly impacted. Members are situated along or near the "I-75 Corridor" in the southwest quadrant of the state of Ohio and are within, or influenced by, the economies in the Cincinnati and Dayton regions. This region has a first-class transit infrastructure providing access to major markets from the Midwest to the east coast. Trucks have access to not only I-75, but also I-70, I-71 and I-675. Two major airports, Cincinnati/Northern Kentucky International Airport and Dayton International Airport, can provide transport by air to 55% of the country's population in only 90 minutes. Additionally, this region is served by the CSX rail line which has access to all major cities and ports in the Midwest and along the east coast. Cargo shipping is also possible along the Ohio River, which borders the state to the south. Port Cincinnati sees 11.7 million tons of general and bulk cargo pass through annually.

### Dayton Area

The Area Chamber of Commerce's Research Advisory Council (RAC) the Dayton region indicated the regional economy has shown itself to be remarkably resilient, aided by federal stimulus packages. The Committee's 2022 Dayton Region Economic Outlook included the following:

- The Dayton regional economic job growth is a little less than 1% and recovery has been slower than the national recovery. Local employment is 2% below pre-COVID-19 levels.
- Inflation is less than the national average, mainly due to the affordability of local housing market.
- Industries that are expected to grow are military (WPAFB), which is a steady industry in the area due to the funding being driven by the federal government; construction due to the housing demand; and goods production because people seem to be spending less money on entertainment services and experiences and more on goods.
- Industries expected to face continued challenges are leisure and hospital. Media is declining due to the ever-changing platforms and pressures from non-traditional platforms and higher education is having its ups and down as enrollments have remained flat.

The unemployment rate for the Dayton MSA was 3.5 % for 2022 which was no change from 2021 which was also 3.5%.

### Cincinnati Area

The Cincinnati area is seeing major industries like manufacturing, transportation and logistics and health care related segments continue to perform well, however companies have also adjusted their operations and adopted new technologies to optimize performance, while effectively bolstering their resiliency. Fannie Mae and JPMorgan Chase pointed out the following regarding Cincinnati's economic outlook:

- The rising costs of doing business are nearly impossible for business leaders to escape. In fact, 99% report that their costs of doing business have increased. More than 76% are raising prices, and 42% have passed along at least half of their increased costs to consumers.
- The continuing labor issues has been a main driver behind their rising costs. When businesses are unable to fill positions, they may need to forego orders or limit the number of new clients they take on, impeding growth.
- The ongoing supply chains issues remain for Queen City business leaders. The impacts are resulting in higher prices for parts and raw materials that are increasingly hard to come by. Local companies have had to educate their clients to expect delays and longer delivery windows.
- The apartment market has gone largely unscathed by the onset of COVID-19 in the metro area. Vacancies continue to improve with a rate of approximately 3.5%. Rent growth remains positive at 2%. Cincinnati was one of the few metro areas that did not experience a precipitous decline in rent growth.

- The healthcare industry will continue to be a major boon for the local economy. Several large healthcare employers are expanding with the plans to hire additional new employees.

The unemployment rate for the Cincinnati area was 3.1% for 2022 which is an increase of 0.1% from 2021.

### **Insurance/Reinsurance Market Outlook Insurance/Reinsurance Market Outlook**

The insurance and reinsurance markets impact MVRMA due to the Association's purchase of excess insurance and reinsurance. These markets continue to be challenging. Many believe it is the most difficult marketplace the industry has experienced in over 30 years. The problematic property market is because of an increased pattern of major property catastrophes, such as hurricanes, typhoons, wildfires, convective storms, winter storms, etc., resulting in significant losses. Insured catastrophic losses in 2022 are estimated to be over \$112 billion, making it the worst loss year for property insurers. Additionally, inflation has only added more pressure to the historic hard insurance marketplace, resulting in higher property valuation, further impacting premiums.

Liability reinsurers and insurers have also pulled back their willingness to insure public entities. This is primarily due to concerns over law enforcement liability, social inflation, and litigation financing, which have resulted in more frequent and severe losses. Cyber Liability capacity is also shrinking and particularly acute for specific industries, including public entities.

As a result of all these factors (and more), we expect upward pressure on the insurance rates for property and liability.

### **Long-term Financial Planning**

Having found what it considers a successful formula for long-term financial planning, MVRMA continues to expand on previously developed programs while being mindful of any new opportunities:

- MVRMA's Shock Loss Fund, which was established as an internal funding mechanism to replace costly stop loss insurance, has surpassed its moving target of being equivalent to the current year's annual loss funding amount. The loss funding amount contributed in 2022 was \$2,500,000 while the Shock Loss Fund balance as of 12/31/22 was \$2,831,105.
- By participating in the insurance captive Government Entities Mutual (GEM), MVRMA has been able to further distance itself from the commercial market. GEM provides reinsurance for liability claims in excess of the pool's \$500,000 self-insured retention. GEM's limit of coverage was \$6.5 million in 2022.
- MVRMA's investment policy is primarily allocated to high-grade corporate bonds and federal agency bonds. MVRMA continued to contract with SJS Investment Consulting, Inc. for investment advisory services in 2022. The pool's investment policy emphasizes protection of principal. Investment yields lagged the market as the year progressed due to

the rapid rise in rates. Over time, MVRMA's investment portfolio is expected to meet or exceed appropriate benchmarks.

- The pool has a policy of returning unused loss funds to its members when a loss year is closed. No loss years were closed in 2022. MVRMA has refunded nearly \$24 million to its members since the Association's formation in 1988.

### **Relevant Financial Policies**

The Amended Agreement and Bylaws of MVRMA establish the basic fiscal requirements of the Association including requiring Board approval of the preliminary budget by September 30 each year and the final budget by December 31, identifying the underwriting information used to establish each member's pool contribution factor, defining when supplementary payments shall be required and when and how surplus funds may be distributed to the membership.

MVRMA adopted its Cash and Investment Policy in 1991 to indicate a conscious, formal effort to develop, implement and monitor the investment of all MVRMA funds. It was last amended in June 2020 and is reviewed annually.

### **Major MVRMA Initiatives During 2022**

Among the Association's achievements during the fiscal period ending December 31, 2022, were the following:

- Prepared and adopted the 2023-2027 Strategic Plan with the assistance of an outside consultant. The Plan reflects members' priorities derived from personal interviews and engagement at a Strategic Planning meeting in May 2022.
- Completed the first full year using a third-party administrator for claims management services;
- Increased the use of focus groups to increase member on member engagement.
- Nearly 1,000 participants attended 39 MVRMA-sponsored training courses throughout the year;
- Completed reviews of members' practices pursuant to the pool's Risk Management Best Practices programs.

### **Awards**

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to MVRMA for its annual comprehensive financial report for the fiscal year ended December 31, 2021. This was the 29<sup>th</sup> consecutive year MVRMA has achieved this prestigious award. 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 annual comprehensive financial report for the year ended December 31, 2022 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.



**Acknowledgements**

Management would like to express appreciation to the Board of Trustees for their dedication to excellence in financial reporting, the principles of risk management, loss control and public entity pooling.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'T. L. Judy', with a long, sweeping horizontal line extending to the right.

Thomas L. Judy, CPA  
Executive Director

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION  
MEMBERS OF THE BOARD OF TRUSTEES  
As of December 31, 2022**

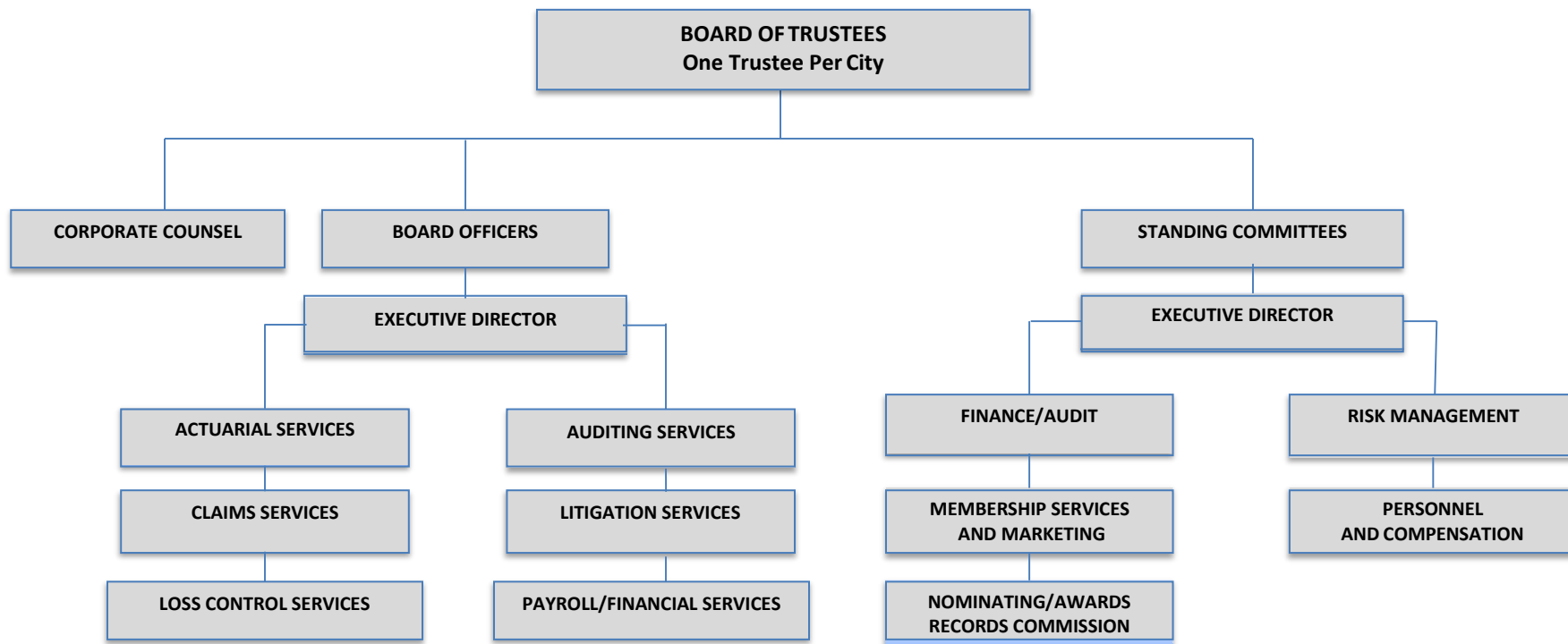
<b><u>Member City</u></b>	<b><u>Trustee</u></b>	<b><u>Alternate</u></b>
Beavercreek	Bill Kucera	Jill Bissinger
Bellbrook	Rob Schomer	Melissa Jones
Blue Ash	Sherry Poppe	Matt Sanders
Centerville	Tyler Roark	Mariah Vogelgesang
Englewood	Eric A. Smith	Barbara McCormick
Fairfield	Laura Murphy	Chris Hacker
Indian Hill	Dina Minneci	Jessica Chaney
Kettering	Nancy Gregory	Estelle Gibson
Madeira	Michael Norton-Smith	Lori Thompson
Mason	Jennifer Heft	Mary Mueller
Miamisburg	Keith Johnson	Emily Christian
Montgomery	John Crowell	Brian Riblet
Piqua	Catherine Bogan	Jennifer Kahle
Sidney	Renee Dulaney	Whitney Flora
Springdale	Brian Uhl	Stephanie Morgan
Tipp City	John Green	Timothy Eggleston
Troy	Patrick Titterington	Sue Knight
Vandalia	Dan Wendt	Melissa Pruszynski
West Carrollton	Brad Townsend	Teresa Brooks
Wilmington	Brad Reynolds	Laura Loggains
Wyoming	Rusty Herzog	Rachel Leininger

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION  
OFFICERS OF THE BOARD OF TRUSTEES  
As of December 31, 2022**

<b><u>Board Office</u></b>	<b><u>Office Holder</u></b>	<b><u>Member City</u></b>
President	Emily Christian	City of Miamisburg
Vice-President	John Crowell	City of Montgomery
Treasurer	Nancy Gregory	City of Kettering
Secretary	Sandra Caudill	MVRMA

# MIAMI VALLEY RISK MANAGEMENT ASSOCIATION

## ORGANIZATIONAL CHART



2022 MEMBER CITIES					
BEAVERCREEK	ENGLEWOOD	MADEIRA	PIQUA	TROY	WYOMING
BELLBROOK	FAIRFIELD	MASON	SIDNEY	VANDALIA	
BLUE ASH	INDIAN HILL	MIAMISBURG	SPRINGDALE	W. CARROLLTON	
CENTERVILLE	KETTERING	MONTGOMERY	TIPP CITY TROY	WILMINGTON	



Government Finance Officers Association

Certificate of  
Achievement  
for Excellence  
in Financial  
Reporting

Presented to

**Miami Valley Risk Management Association  
Ohio**

For its Annual Comprehensive  
Financial Report  
For the Fiscal Year Ended

December 31, 2021

*Christopher P. Morill*

Executive Director/CEO

## **Independent Auditor's Report**

Miami Valley Risk Management Association  
Montgomery County  
3085 Woodman Drive, Suite 200  
Kettering, Ohio 45420

To the Members of the Board of Trustees:

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

#### ***Opinion***

We have audited the accompanying financial statements of the Miami Valley Risk Management Association (MVRMA), Montgomery County, Ohio, (a not-for-profit corporation), as of and for the year ended December 31, 2022, and the related notes to the financial statements, which collectively comprise the MVRMA's basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the respective financial position of the MVRMA, as of December 31, 2022, and the changes in financial position and its cash flows thereof 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. 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 MVRMA 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.

#### ***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 MVRMA'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 MVRMA'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 MVRMA'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, and schedules of net pension and other postemployment benefit assets and liabilities and pension and other postemployment benefit contributions 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 GAAS, 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.

***Other Information***

Management is responsible for the other information included in the annual financial report. The other information comprises the introductory, statistical and actuarial sections but does not include the basic financial statements and our auditor's report thereon. Our opinion on the basic financial statements does 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 basic 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.

***Other Reporting Required by Government Auditing Standards***

In accordance with *Government Auditing Standards*, we have also issued our report dated June 27, 2023 on our consideration of the MVRMA's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the MVRMA's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the MVRMA's internal control over financial reporting and compliance.



Julian & Grube, Inc.  
June 27, 2023



## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

Management's Discussion and Analysis  
For The Year Ended December 31, 2022

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The management of the Miami Valley Risk Management Association (MVRMA or Association) provides the following introduction, overview, and analysis of MVRMA's financial statements for the year ended December 31, 2022. This discussion and analysis is designed to assist the reader in focusing on significant financial issues and activities and to identify any significant changes in financial position. We encourage the reader to consider the information presented here in conjunction with the basic financial statements taken as a whole.

MVRMA is a consortium of municipalities located in southwest Ohio, which formed an Association under Section 2744.081 of the Ohio Revised Code (ORC) to act collectively in addressing its members' risk management and risk financing needs. It became operational in December 1988 with six charter members and now has twenty-one members.

### **Basic Financial Statements and Presentation**

The financial statements presented by the Association are the Statement of Net Position, Statement of Revenues, Expenses, and Changes in Net Position and the Statement of Cash Flows. As required by accounting principles generally accepted in the United States of America (GAAP), the Association is accounted for as one enterprise fund.

The tables presented in this Management's Discussion and Analysis provide a summary of the Association's financial position and results of operations for 2022 and 2021, respectively.

### **The Statement of Net Position**

This statement reports all the Association's assets and liabilities as of December 31, 2022, categorized as current and non-current assets and liabilities. Assets consist mainly of cash and investments. Liabilities consist mainly of claims reserves and members' dividends payable. Reporting for GASB 68 has created two new categories: deferred outflows of resources and deferred inflows of resources. The balance of total assets and deferred outflows less total liabilities and deferred inflows is reported as "net position."

The following table presents a condensed summary information of the Association's net position as of December 31, 2022 compared to December 31, 2021.

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**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**

Management's Discussion and Analysis

For The Year Ended December 31, 2022

**Condensed Statement of Net Position**

	<b>2022</b>	<b>2021</b>
<b>CURRENT ASSETS</b>		
Cash and cash equivalents	\$948,568	\$2,502,609
Accounts receivable	450,513	691,846
Prepaid Expenses	820,901	673,115
Investments	2,221,260	2,275,795
<b>NONCURRENT ASSETS</b>		
Investments	13,018,980	13,070,116
Net pension asset	1,915	1,957
Net OPEB asset	61,484	43,809
Capital assets less depreciation	8,978	5,058
Total assets	17,532,599	19,264,305
<b>DEFERRED OUTFLOWS OF RESOURCES</b>		
Deferred outflows of resources related to pension	67,931	48,129
Deferred outflows of resources related to OPEB	5,215	33,205
Total deferred outflows of resources	73,146	81,334
<b>CURRENT LIABILITIES</b>		
Unpaid claim losses and loss adjustment expenses	1,166,242	662,727
Members' dividends payable	4,738,520	6,518,291
Accounts payable and accrued liabilities	12,888	179,759
Total current liabilities	5,917,650	7,360,777
<b>NONCURRENT LIABILITIES</b>		
Unpaid claim losses and loss adjustment expenses	1,954,020	3,784,330
Net pension liability	143,818	323,255
Total noncurrent liabilities	2,097,838	4,107,585
Total Liabilities	8,015,488	11,468,362
<b>DEFERRED INFLOWS OF RESOURCES</b>		
Deferred inflows of resources related to pension	241,004	139,730
Deferred inflows of resources related to OPEB	70,578	133,858
Total deferred inflows of resources	311,582	273,588
<b>TOTAL NET POSITION</b>		
Invested in capital assets	8,978	5,058
Unrestricted	9,269,697	7,598,631
Total net position	\$9,278,675	\$7,603,689

## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

### Management's Discussion and Analysis For The Year Ended December 31, 2022

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The net pension liability (NPL) is reported pursuant to GASB Statement 68, "Accounting and Financial Reporting for Pensions—an Amendment of GASB Statement 27." In 2018, the Association adopted GASB Statement 75, "Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions," which significantly revises accounting for costs and liabilities related to other postemployment benefits (OPEB). For reasons discussed below, many end users of this financial statement will gain a clearer understanding of the Association's actual financial condition by adding deferred inflows related to pension and OPEB, the net pension liability and the net OPEB liability to the reported net position and subtracting deferred outflows related to pension and OPEB.

Governmental Accounting Standards Board standards are national and apply to all government financial reports prepared in accordance with generally accepted accounting principles. Prior accounting for pensions (GASB 27) and postemployment benefits (GASB 45) focused on a funding approach. This approach limited pension and OPEB costs to contributions annually required by law, which may or may not be sufficient to fully fund each plan's *net pension liability* or *net OPEB liability*. GASB 68 and GASB 75 take an earnings approach to pension and OPEB accounting; however, the nature of Ohio's statewide pension/OPEB plans and state law governing those systems requires additional explanation in order to properly understand the information presented in these statements.

GASB 68 and GASB 75 require the net pension liability and the net OPEB liability to equal the Association's proportionate share of each plan's collective:

1. Present value of estimated future pension/OPEB benefits attributable to active and inactive employees' past service.
2. Minus plan assets available to pay these benefits.

GASB notes that pension and OPEB obligations, whether funded or unfunded, are part of the "employment exchange" – that is, the employee is trading his or her labor in exchange for wages, benefits, and the promise of a future pension and other postemployment benefits. GASB noted that the unfunded portion of this promise is a present obligation of the government, part of a bargained-for benefit to the employee, and should accordingly be reported by the government as a liability since they received the benefit of the exchange. However, the Association is not responsible for certain key factors affecting the balance of these liabilities. In Ohio, the employee shares the obligation of funding pension benefits with the employer. Both employer and employee contribution rates are capped by State statute. A change in these caps requires action of both Houses of the General Assembly and approval of the Governor. Benefit provisions are also determined by State statute. The Ohio Revised Code permits, but does not require, the retirement systems to provide healthcare to eligible benefit recipients. The retirement systems may allocate a portion of the employer contributions to provide for these OPEB benefits.

The employee enters the employment exchange with the knowledge that the employer's promise is limited not by contract but by law. The employer enters the exchange also knowing that there is a specific, legal limit to its contribution to the retirement system. In Ohio, there is no legal means to enforce the unfunded liability of the pension/OPEB plan *as against the public employer*. State law operates to mitigate/lessen the moral obligation of the public employer to the employee,

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**

Management's Discussion and Analysis

For The Year Ended December 31, 2022

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because all parties enter the employment exchange with notice as to the law. The retirement system is responsible for the administration of the pension and OPEB plans.

Most long-term liabilities have set repayment schedules or, in the case of compensated absences (i.e., sick and vacation leave), are satisfied through paid time-off or termination payments. There is no repayment schedule for the net pension liability or the net OPEB liability. As explained above, changes in benefits, contribution rates, and return on investments affect the balance of these liabilities but are outside the control of the local government. If contributions, investment returns, and other changes are insufficient to keep up with required payments, State statute does not assign/identify the responsible party for the unfunded portion. Due to the unique nature of how the net pension liability and the net OPEB liability are satisfied, these liabilities are separately identified within the long-term liability section of the statement of net position.

In accordance with GASB 68 and GASB 75, the Association's statements prepared on an accrual basis of accounting include an annual pension expense and an annual OPEB expense for their proportionate share of each plan's *change* in net pension liability and net OPEB liability, respectively, not accounted for as deferred inflows/outflows.

Unpaid claim losses and loss adjustment expenses is a liability for net unpaid losses, including incurred but not reported losses, and loss adjustment expenses. This amount is determined annually with the assistance of an outside actuary. This liability is separated into current and noncurrent portions based upon a combination of an analysis of outstanding claims and historical experience. In 2022, the unpaid claims liability decreased by about \$1,326,795, or 29.8%, due to decreases in the estimates of ultimate losses for prior years. This follows an increase of about \$1,250,000 in 2021 and a decrease of about \$232,000 in 2020.

**% Claims Reserves by Line of Business  
As of December 31**

<b><u>Line of Business</u></b>	<b><u>2022</u></b>	<b><u>2021</u></b>
Auto Liability	10%	4%
General Liability	73%	73%
Property	17%	23%

The liability for members' dividends reflects the funds being held in MVRMA's General Reserve Fund (GRF). The General Reserve Fund accounts for surplus funds returned, but not yet paid, to members from closed loss years. Once surplus funds are returned to the members, these funds are deposited in the GRF to the account of each individual member. Members may withdraw their GRF funds within 30 days after the closure of a loss year, or in January of each year, or for the payment of any MVRMA invoice at any time throughout the year. The members' dividends liability decreased in 2022 due to the closure of no loss years and continued member withdrawals.

Net position is divided into two categories, net investment in capital assets and unrestricted. The net investment in capital assets represents the net book value of capital assets, while the remaining net position amount is unrestricted for future use by the Association. Net position invested in capital assets increased from \$5,058 to \$8,978 during 2022 due to the purchase of computer

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**

Management's Discussion and Analysis

For The Year Ended December 31, 2022

equipment during the year. Total net position increased in 2022 by \$1,674,986, or 22%, due to favorable claims losses.

**The Statement of Revenues, Expenses and Changes in Net Position**

This statement reflects the operating and non-operating revenue and expenses for the fiscal year and how the Association's net position changed during the year. As noted previously, MVRMA's net position increased by 22% in 2022.

**Condensed Statement of Revenues, Expenses, and Changes in Net Position**

	<u><b>2022</b></u>	<u><b>2021</b></u>
Operating Revenue	<u>\$6,367,353</u>	<u>\$5,416,717</u>
Operating Expenses:		
Incurred claims and claims adjustment expenses	827,856	2,467,648
Reinsurance premiums	2,362,508	1,808,446
General and administrative expenses	<u>631,270</u>	<u>885,455</u>
Total Operating Expenses	<u>3,821,634</u>	<u>5,161,549</u>
Operating Income (Loss)	2,545,719	255,168
Nonoperating Revenue (Expense):		
Interest income and realized and unrealized gains (losses) on investments	-859,721	-179,063
Members' dividends	<u>-11,012</u>	<u>-1,724,642</u>
Changes in Net Position	1,674,986	(1,648,537)
Net position, beginning of year	<u>7,603,689</u>	<u>9,252,226</u>
Net position, end of year	<u><u>\$9,278,675</u></u>	<u><u>\$7,603,689</u></u>

Operating revenue consists primarily of members' contributions. The major categories of operating expenses are claims and claims adjustment expenses, reinsurance premiums, general and administrative expenses, and dividends to members. Non-operating revenue and expense is primarily related to investment activity.

Members' contributions made up 95% and 92% of the Association's operating revenues in 2022 and 2021, respectively.

## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

### Management's Discussion and Analysis

For The Year Ended December 31, 2022

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Members' contributions are determined by an underwriting formula that takes into account claim losses over a rolling four-year period and six risk exposure factors: population, number of police officers, number of other employees, titled vehicles, insurable property values, and net operating expenses.

Changes in net position can vary widely from year to year. This variation is chiefly due to fluctuations in incurred claims expense and members' dividends. Although the incurred claims expense is subject to variability, it is moderated somewhat by the insuring of losses above the pool's self-insured retentions of \$500,000 per occurrence for liability claims and \$250,000 for property claims. Members' dividends expense is incurred when the Board of Trustees closes a loss year and refunds the residual assets in the loss year to the members. These amounts can be significant and do not necessarily occur each year. The reduction in net position during 2021 was attributable to members' dividends resulting from the closure of the 2017 loss year.

### **The Statement of Cash Flows**

The Statement of Cash Flows allows readers of the financial statements to assess the Association's ability to generate sufficient cash flow to meet its obligations in a timely manner. Cash and equivalents decreased by \$1,554,041 in 2022 due to relatively large amount of cash payments for claims and due to being more fully invested at the end of 2022.

	<b><u>2022</u></b>	<b><u>2021</u></b>
Cash flows from operating activities	(\$861,905)	(\$393,480)
Cash flows used in capital and related financing activities	(7,000)	(5,885)
Cash flows from (used in) investing activities	<u>(685,136)</u>	<u>709,009</u>
Net change in cash and cash equivalents	(1,554,041)	309,644
Cash and Cash Equivalents - Beginning of year	<u>2,502,609</u>	<u>2,192,965</u>
Cash and Cash Equivalents - End of year	<u><u>\$948,568</u></u>	<u><u>\$2,502,609</u></u>

### **2023 Projects and Future Plans**

For 2023, the Association's liability limit of coverage remains \$12 million per occurrence. The first layer of liability reinsurance coverage, purchased from Government Entities Mutual, a protected cell reinsurance captive domiciled in the District of Columbia, provides limits of \$6.5 million excess of the Association's self-insured retention of \$500,000. The next layer of reinsurance with General Reinsurance Corporation is \$5 million excess of \$7 million.

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**

Management's Discussion and Analysis  
For The Year Ended December 31, 2022

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Property insurance for the period 7/1/22-7/1/23 was again placed with the Alliant Property Insurance Program (APIP). MVRMA's premium rate effective 7/1/22 increased by about 15% following increases of 40% in 2021, 22% in 2020, and 17% in 2019. These increases were due to the impact upon the property insurance market of large weather-related claims. At this time, MVRMA is preparing for its 7/1/23 renewal and is anticipating another significant rate increase due to losses from Hurricane Ian and other weather events.

**Contacting MVRMA**

This financial report is designed to provide members, creditors, and investors with a general overview of MVRMA's finances and to show MVRMA's accountability for the monies it receives. If you have any questions about this report or need additional information, contact the Executive Director in writing at 3085 Woodman Drive, Suite 200, Kettering, OH 45420 or calling (937) 438-8878.

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**  
**STATEMENT OF NET POSITION**  
**DECEMBER 31, 2022**

**ASSETS**

**CURRENT ASSETS:**

Cash and cash equivalents	\$948,568
Accounts receivable:	
Claims deductibles	84,548
Reinsurance	287,031
Interest and Other	78,934
Prepaid items	820,901
Investments	2,221,260
Total current assets	<u>4,441,242</u>

**NONCURRENT ASSETS:**

Investments	13,018,980
Net pension asset	1,915
Net OPEB asset	61,484
Capital Assets:	
Equipment	20,371
Office furniture	9,839
Total capital assets	<u>30,210</u>
Accumulated depreciation	<u>(21,232)</u>
Capital assets - net	<u>8,978</u>
Total noncurrent assets	<u>13,091,357</u>
Total Assets	<u>17,532,599</u>

**DEFERRED OUTFLOWS OF RESOURCES**

Deferred outflows of resources related to pension	67,931
Deferred outflows of resources related to OPEB	5,215
Total Deferred Outflows	<u>73,146</u>

**LIABILITIES**

**CURRENT LIABILITIES:**

Unpaid claims losses and loss adjustment expenses	1,166,242
Members' dividends payable	4,738,520
Accounts payable and accrued liabilities	12,888
Total current liabilities	<u>5,917,650</u>

**NONCURRENT LIABILITIES:**

Unpaid claims losses and loss adjustment expenses	1,954,020
Net pension liability	143,818
Total noncurrent liabilities	<u>2,097,838</u>
Total Liabilities	<u>8,015,488</u>

**DEFERRED INFLOWS OF RESOURCES**

Deferred inflows of resources related to pension	241,004
Deferred inflows of resources related to OPEB	70,578
Total Deferred Inflows	<u>311,582</u>

**NET POSITION**

Investment in capital assets	8,978
Unrestricted	9,269,697
Total net position	<u>\$9,278,675</u>

See notes to the basic financial statements



**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**  
**STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION**  
**FOR THE YEAR ENDED DECEMBER 31, 2022**

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OPERATING REVENUES:

Members' contributions	\$6,057,009
Claim deductibles	252,400
Other	57,944

Total operating revenues	<u>6,367,353</u>
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OPERATING EXPENSES:

Claim expenses:	
Incurred claims and claim adjustment expenses	827,856
Reinsurance/insurance premiums	2,362,508

Total claim expenses	<u>3,190,364</u>
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General and administrative expenses:

Professional fees	277,730
Salaries and benefits	254,931
Depreciation	3,080
Rent	34,756
Other	60,773

Total general and administrative fees	<u>631,270</u>
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Total operating expenses	<u>3,821,634</u>
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OPERATING INCOME (LOSS)	<u>2,545,719</u>
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NON-OPERATING REVENUE (EXPENSE):

Interest income	203,178
Gain/(loss) on investments	(1,062,899)
Members' Dividends	(11,012)

Total Non-operating Revenue (Expense)	<u>(870,733)</u>
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CHANGE IN NET POSITION	1,674,986
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NET POSITION

Beginning of year	<u>7,603,689</u>
End of year	<u><u>\$9,278,675</u></u>

See notes to the basic financial statements

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**  
**STATEMENT OF CASH FLOWS**  
**FOR THE YEAR ENDED DECEMBER 31, 2022**

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**CASH FLOWS FROM OPERATING ACTIVITIES:**

Cash received for member contributions	\$6,057,009
Cash received for deductible reimbursements	227,340
Cash received from insurance proceeds	310,637
Cash received from subrogation recoveries	358,535
Cash received from other sources	72,859
Cash payments for claims	(2,612,641)
Cash payments for general reserve fund payouts	(1,865,661)
Cash payments for reinsurance premiums	(2,519,581)
Cash payments for professional fees	(313,081)
Cash payments for employment expenses	(407,016)
Cash payments for rent	(34,813)
Cash payments for other expenses	<u>(135,492)</u>

Net cash provided by (used in) operating activities	<u>(861,905)</u>
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**CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES:**

Purchase of capital assets	<u>(7,000)</u>
Net cash provided by (used in) capital and related financing activities	<u>(7,000)</u>

**CASH FLOWS FROM INVESTING ACTIVITIES:**

Investment purchases	(3,831,247)
Investment sales/maturities	2,874,019
Interest and dividends on investments	<u>272,092</u>

Net cash provided by (used in) investing activities	<u>(685,136)</u>
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NET CHANGE IN CASH AND CASH EQUIVALENTS	(1,554,041)
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**CASH AND CASH EQUIVALENTS:**

Beginning of Year	<u>2,502,609</u>
End of Year	<u><u>\$948,568</u></u>

See notes to the basic financial statements

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**  
**STATEMENT OF CASH FLOWS (Continued)**  
**FOR THE YEAR ENDED DECEMBER 31, 2022**

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**RECONCILIATION OF OPERATING INCOME (LOSS) TO NET CASH  
PROVIDED BY (USED IN) OPERATING ACTIVITIES**

Operating Income (Loss)	\$2,545,719
Adjustments to reconcile change in net position to net cash provided by (used in) operating activities:	
Depreciation	3,080
Member dividends declared	(11,012)
(Increase) / decrease in assets:	
Claims deductibles receivable	(25,060)
Reinsurance receivable	274,757
Other receivables	(2,400)
Prepaid items	(147,786)
Net pension asset	42
Net OPEB Asset	(17,675)
(Increase) / decrease in deferred outflows:	
Deferred outflows of resources related to pension	(19,802)
Deferred outflows of resources related to OPEB	27,990
Increase / (decrease) in liabilities:	
Unpaid claims losses and loss adjustment expenses	(1,326,795)
Accounts payable, accrued liabilities, members' credits and members' refunds	(2,021,520)
Net pension liability	(179,437)
Net OPEB liability	0
Increase / (decrease) in deferred inflows:	
Deferred inflows of resources related to pension	101,274
Deferred inflows of resources related to OPEB	(63,280)
Net cash provided by (used in) operating activities	<u><u>(\$861,905)</u></u>

**NON-CASH INVESTING ACTIVITIES:**

- Miami Valley Risk Management Association, Inc. had a decrease in the fair value of investments in the amount \$105,671 during 2022.

See notes to the basic financial statements

## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

### NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

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#### NOTE 1 – ORGANIZATION AND SIGNIFICANT ACCOUNTING POLICIES

Miami Valley Risk Management Association, Inc. (the “Association”) is an Ohio not-for-profit Corporation organized for the public purpose of enabling its member political subdivisions to obtain insurance coverage. It provides methods for paying claims, and provides a formalized, jointly administered self-insurance pool. In addition to the self-insurance pool, the Association provides risk management services, loss prevention programs, and other educational programs and materials. The members of the Association include the following cities within the State of Ohio: Beavercreek, Bellbrook, Blue Ash, Centerville, Englewood, Fairfield, Kettering, Madeira, Mason, Miamisburg, Montgomery, Piqua, Sidney, Springdale, Tipp City, Troy, Vandalia, Indian Hill, West Carrollton, Wilmington and Wyoming.

***Basis of Accounting*** – The Association follows the accrual basis of accounting as required for enterprise funds and is not legally required to adopt a budget. All transactions are accounted for in a single enterprise fund in accordance with Governmental Accounting Standards Board (GASB) Statement No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements*.

***Member and Supplemental Contributions*** – The Association has classified its revenues as either operating or non-operating. Non-operating revenue primarily is the result of earning investment income and related gains and losses on investments. Member and supplemental contributions are recognized on the accrual basis and are recorded as revenue in the period earned. Member contributions are calculated and collected annually to produce a sum of money within the self-insurance pool adequate to fund administrative expenses and claims of the Association and to create adequate reserves for claims and unallocated loss adjustment expenses.

Under the terms of membership, should annual member contributions not be sufficient to fund ultimate losses, establish adequate reserves and cover administrative expenses, the Board of Trustees may require supplemental contributions. Supplemental contributions may be assessed during the entire life of the Association and any later period when claims or expenses, which are attributable to any membership year during which the event or claim occurred, need to be paid. Upon approval of the Board of Trustees, transfers from the Shock Loss Fund (“SLF”) (see note 6) may occur, in lieu of supplemental contributions. There were no supplemental contributions in 2022.

***Cash and cash equivalents*** consist of deposits with financial institutions having an original maturity of 90 days or less.

***Claims deductibles*** represent the first \$2,500 of any claim paid by the Association which is reimbursed by Association members.

***Investments*** are stated at fair value. Realized gains and losses are determined on the identified cost basis.

## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

### NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

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The Association's investment policy authorizes the Association to invest in the following:

- 1.) United States treasury bills, notes, bonds, or any other obligation or security issued by the United States treasury, or any other obligation guaranteed as to principal and interest by the United States;
- 2.) Bonds, notes, debentures, or any other obligations or securities issued by any federal agency or instrumentality, including government sponsored enterprises. All federal agency securities shall be direct issuances of federal government agencies or instrumentalities;
- 3.) Deposits in eligible financial institutions;
- 4.) Bonds, notes, or other obligations of the State of Ohio and its political subdivisions;
- 5.) Investment grade corporate bonds (industrial, utility, or financial). Corporate bonds purchased shall be rated not lower than A2 by Moody's or A by S&P at the date of purchase;
- 6.) The State Treasury Asset Reserve of Ohio (STAR Ohio) or such successor investment pools operated or managed by the Treasurer of the State of Ohio; and
- 7.) No-load money market mutual funds consisting exclusively of obligations described in 1 or 2 above.

**Capital assets** – Capital assets are carried at cost. Donated capital assets are recorded at their acquisition values as of the date received. Depreciation is provided on the straight-line basis at rates which are expected to amortize the costs of the assets over their estimated useful lives. The capitalization threshold is \$500. All major classes of depreciable assets have a useful life of three years or greater.

**Unpaid Claim Losses and Unallocated Loss Adjustment Expenses** – Provisions for unpaid claims and claims adjustment expenses are based on information reported by members and are calculated by the Association's actuary. These amounts represent an estimate of reported, unpaid claims, plus a provision for claims incurred but not reported. The Association's management believes the estimate of the liability for unpaid claims is reasonable and supported by valid actuarial calculations; however, actual incurred losses and loss adjustment expenses may not conform to the assumptions inherent in the determination of the liability. Accordingly, the ultimate settlement of losses and related loss adjustment expenses may vary from the estimated amounts included in the accompanying financial statements. Should the provision for unpaid claims not be sufficient, supplemental contributions as discussed above may be assessed subject to Board approval.

**Member Credits** – The bylaws of the Association provide that surplus operating funds may be used to credit future annual contributions at the discretion of the Board of Trustees. For the year ended December 31, 2022, member contributions are presented net of a credit of \$0.

## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

### NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

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***Member Dividends*** – Dividends to members consist of refunds of the residual cash from closed loss years and refunds from the Shock Loss Fund. No loss years were closed in 2022. Refunds are made to members from the Shock Loss Fund (see Note 6) to the extent the member's Shock Loss Fund balance exceeds its required balance by greater than forty percent. Such refunds were \$11,012 in 2022.

***Net Position*** – Net position represents the excess of revenues over expenses since inception. It is displayed in three components as follows:

Investment in capital assets consists of capital assets, net of accumulated depreciation.

Restricted consists of net position that is legally restricted by outside parties or by law through constitutional provisions or enabling legislation.

Unrestricted consists of net position that does not meet the definition of "restricted" or "investment in capital assets."

As of December 31, 2022, the Association had no "restricted" net position. Under certain conditions, the Association may distribute, as member dividends, all or part of the net position to those members who constituted the self-insurance pool during the years when such surplus member funds were earned, provided that such members must also be members of the Association in the year in which said distribution is made.

In the event of termination of the Association, all members of the Association, past and present, are obligated for any necessary supplemental contributions attributable to the years during which they were members. After all claims and related expenses have been properly paid or reserves established for the payment of any such claims, any surplus member funds shall be distributed to members in proportion to their interest in such surplus member funds.

***Pensions/Other Postemployments Benefits (OPEB)*** – For purposes of measuring the net pension/OPEB liability/asset, deferred outflows of resources and deferred inflows of resources related to pensions/OPEB, and pension/OPEB expense, information about the fiduciary net position of the pension/OPEB plans and additions to and deductions from their fiduciary net position have been determined on the same basis as they are reported by the pension/OPEB plan. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. The pension/OPEB plans report investments at fair value.

***Income taxes*** – The Internal Revenue Service has ruled that premiums and investment income with respect to premium receipts are excluded from taxable income of the Association under Section 115 of the Internal Revenue Code of 1986. Therefore, the Association is not subject to tax.

***Operating Revenues and Expenses*** – Operating revenues are those revenues that are generated directly from primary activities. For the Association, these revenues are primarily member contributions and claims deductibles received from members. Operating expenses are the

## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

### NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

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necessary costs incurred to provide the services that are the primary activity. All revenue and expenses not meeting these definitions are reported as non-operating.

***Use of Estimates*** – The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

***Fair Value Measurements*** – The Association categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

***Prepaid Items*** – Prepaid Items represent expenses which have been paid, but not yet incurred under GAAP. These items are reported as an asset on the statement of net position.

***Deferred Inflows of Resources and Deferred Outflows of Resources*** – In addition to assets, the Statement of net position will report a separate section for deferred outflows of resources. Deferred outflows of resources represent a consumption of net assets that applies to a future period and will not be recognized as an outflow of resources (expense) until then. For the Association, see notes 8 and 9 for deferred outflows of resources related to the Associations net pension liability/asset and net OPEB liability/asset, respectively.

In addition to liabilities, the statement of net position will report a separate section for deferred inflows of resources. Deferred inflows of resources represent an acquisition of net assets that applies to a future period and will not be recognized as an inflow of resources (revenue) until that time. For the Association, see notes 8 and 9 for deferred inflows of resources related to the Associations net pension liability/asset and net OPEB liability/asset, respectively.

## NOTE 2 – DEPOSITS AND INVESTMENTS

### ***Deposits as of December 31, 2022***

***Custodial Credit Risk*** – Custodial credit risk with respect to bank deposits is the potential for loss of the Association’s deposits in the event of the failure of a depository financial institution. Protection of the Association’s cash and deposits is provided by the Federal Deposit Insurance Corporation.

At December 31, 2022, the carrying amount of the Association’s deposits was \$948,568. The bank balance was \$1,205,134, and of this amount, \$1,117,827 was insured by federal depository insurance. Based on the criteria described in GASB Statement No. 40, “Deposit and Investment Risk Disclosures”, \$87,307 of the Association’s bank balance was exposed to custodial risk.

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**

NOTES TO THE BASIC FINANCIAL STATEMENTS  
FOR THE YEAR ENDED DECEMBER 31, 2022

***Investments as of December 31, 2022***

At December 31, 2022, the Association had the following investments:

Investment	Measurement Value	Investment Maturities			
		Less than 6 months	6 mo. to 1 year	1 to 3 years	Greater than 3 years
US Treasury	\$292,875			\$292,875	
FHLB	\$3,072,071			\$861,345	\$2,210,726
FFCB	\$1,714,641		\$287,867	\$290,583	\$1,136,191
FHLMC	\$1,169,448			\$925,379	\$244,069
FNMA	\$369,121			369,121	
Corporate Bonds	\$7,476,495	\$1,537,804		\$4,763,916	\$1,174,775
Negotiable Certificates of Deposit	\$395,589		395,589		
Government Entities Mutual, Inc. (see Note 6)	\$750,000				\$750,000
Total	<u>\$15,240,240</u>	<u>\$1,537,804</u>	<u>\$683,456</u>	<u>\$7,503,219</u>	<u>\$5,515,761</u>

The Association's investments in negotiable certificates of deposit, federal agency securities (FHLB, FFCB, FHLMC, FNMA) and corporate bonds are valued using quoted prices in markets that are not considered to be active, dealer quotations or alternative pricing sources for familiar assets or liabilities for which all significant inputs are observable, either directly or indirectly (Level 2 inputs).

**Interest Rate Risk** – Interest rate risk is the risk that the value of investments will decrease as a result of an increase in interest rates. To limit interest rate risk, the Association's investment policy limits security purchases to those that mature within seven years of the settlement date.

**Credit Risk** – Credit risk for holders of debt securities is the risk that the debtor will not be able to make its scheduled payments. The Association's investments in the Federal Home Loan Mortgage Corporation, Federal Home Loan Bank, Federal National Mortgage Association and Federal Farm Credit Bank are rated Aaa by Moody's and/or AA+ by Standard & Poor's. The Association's investment in GEM is not rated. The Association's investment policy requires corporate bonds, when purchased, to be rated not lower than A2 by Moody's or A by Standard & Poor's. As of 12/31/22, all corporate bonds held by the Association met or exceeded these benchmarks.

**Custodial Credit Risk** – For an investment, custodial credit risk is the risk that an investor might be unable to recover the value of an investment in the possession of an outside third party should the counterparty to the investment transaction fail. The Association's investment in Government



## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

### NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

Entities Mutual is subject to custodial credit risk. The Association's investments in debt securities of FHLB, FNMA, FHLMC, FFCB and the various corporate issuers are either registered in the Association's name or held in pledge accounts of the custodial financial institutions and the underlying records of the custodial financial institutions support the Association's claim to the investments; therefore, these investments are considered to be held in the Association's name and are not subject to custodial credit risk. The Association's investment policy does not specifically address credit risk beyond restricting the Association to invest only in securities authorized.

*Concentration of Credit Risk* – The Association's investment policy states “no more than 25% of the total investment portfolio shall be invested with any one eligible financial institution as a time deposit at the time a deposit is made, exclusive of United States Treasury securities, all Federal Agency securities, and STAR Ohio.” Five percent or more of the Association's investments were in the following at December 31, 2022:

<u>Investment</u>	<u>% as of 12/31/22</u>
Federal Home Loan Bank	20.2%
Federal Farm Credit Bank	11.3%
Federal Home Loan Mortgage Corporation	7.7%

### NOTE 3 – CAPITAL ASSETS

Capital assets activity for the year ended December 31, 2022, was as follows:

	<u>Balance</u> <u>01/01/22</u>	<u>Additions</u>	<u>Transfers/ Disposals</u>	<u>Balance</u> <u>12/31/22</u>
<b>Capital Assets Being Depreciated:</b>				
Equipment	23,653	7,000	(10,282)	\$20,371
Office Furniture	11,923	0	(2,084)	\$9,839
Total Property and Equipment	<u>35,576</u>	<u>7,000</u>	<u>(12,366)</u>	<u>30,210</u>
<b>Less: Accumulated Depreciation</b>				
Equipment	(18,816)	(2,971)	10,282	(\$11,505)
Office Furniture	<u>(11,702)</u>	<u>(109)</u>	<u>2,084</u>	<u>(\$9,727)</u>
Total Accumulated Depreciation	<u>(30,518)</u>	<u>(3,080)</u>	<u>12,366</u>	<u>(21,232)</u>
Total Capital Assets Being Depreciated, net	<u>\$5,058</u>	<u>\$3,920</u>	<u>\$0</u>	<u>\$8,978</u>

### NOTE 4 – NONCURRENT LIABILITIES

Noncurrent liability activity for the year ended December 31, 2022 was as follows:

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.****NOTES TO THE BASIC FINANCIAL STATEMENTS  
FOR THE YEAR ENDED DECEMBER 31, 2022**

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	Beginning Balance	Additions	Reductions	Ending Balance
Unpaid Claims losses and LAE	\$4,447,057		\$1,326,795	\$3,120,262
Net Pension Liability	\$323,255		\$179,437	\$143,818

**NOTE 5 – SELF-INSURED RETENTION**

The Association retains responsibility for the payment of claims within specified self-insured retention limits prior to the application of coverage provided by excess insurance and reinsurance contracts. The Association's per-occurrence retention limit for liability claims was \$500,000 and property claims had an all-risk per-occurrence retention limit of \$250,000 in 2022. Boiler and machinery had a per occurrence retention limit from \$10,000 to \$350,000 depending upon boiler size. For every occurrence, the member was charged a deductible equal to the amount of the claim or \$2,500, whichever was less.

**NOTE 6 – INSURANCE AND REINSURANCE CONTRACTS**

The Association maintains insurance and reinsurance contracts with insurance carriers who provide various limits of coverage over the Association's self-insured retention limits. Under the Association's bylaws, the Board of Trustees annually determines the types of insurance/reinsurance to purchase as well as appropriate limits. For the loss year ended December 31, 2022, the Association purchased the following types of insurance/reinsurance in excess of the Association's self-insured retention:

<b><u>Excess Insurance / Reinsurance</u></b>	<b><u>Limits of Coverage</u></b>
General liability (including law enforcement) per occurrence	\$11,500,000
Automobile liability per occurrence	\$11,500,000
Public official liability:	
Per occurrence	\$11,500,000
Per member annual aggregate	\$11,500,000
Employment practices liability:	
Per occurrence	\$11,500,000
Per member annual aggregate	\$11,500,000
Property (excluding flood and earthquake) per occurrence	\$500,000,000
Flood and earthquake property coverage – per occurrence and annual aggregate	\$25,000,000

In 2022, MVRMA reinsured its liability program with Government Entities Mutual (a protected cell reinsurance captive domiciled in the District of Columbia) for \$6.5 million excess of MVRMA's \$500,000 self-insured retention and with General Reinsurance Corporation for \$5 million excess of \$7 million.

In 1996, the Association established a Shock Loss Fund (SLF) to replace the aggregate stop-loss policy. The Association's members contribute to the SLF based on a moving target equal to the

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**

**NOTES TO THE BASIC FINANCIAL STATEMENTS  
FOR THE YEAR ENDED DECEMBER 31, 2022**

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annual contributions to the annual loss fund. The Association's members annually fund approximately 15 percent of the moving target until the balance of the SLF is equivalent to the members' current year's annual loss fund. Once a member has at least the current year's regular loss fund contribution on account in the Association's SLF, it is not required to contribute additionally to the SLF. Any member whose balance falls below its targeted amount is required to contribute the amount needed to reach its targeted amount, or 15 percent of the current annual loss year contribution, whichever is less.

In the event that a series of losses or a single loss should exceed the amount of coverage provided by the self-insurance fund and insurance/reinsurance and any amount of supplemental payments for which members are obligated, then the payment of any uncovered loss is the obligation of the individual member or members against which the claims were made. In the unlikely event that all or any of the insurance companies are unable to meet their obligations under the excess insurance and reinsurance contracts, the Association and its members would be responsible for such defaulted amounts in accordance with the applicable policy terms and conditions.

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**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.****NOTES TO THE BASIC FINANCIAL STATEMENTS  
FOR THE YEAR ENDED DECEMBER 31, 2022****NOTE 7 – UNPAID CLAIMS LIABILITY**

As discussed in Note 1, the Association establishes an unpaid claims liability which includes both reported and unreported insured events and estimates of future payment of losses and related claims adjustment expenses. The changes in the aggregate liabilities for the Association are as follows:

	December 31 2022	December 31 2021
Unpaid claims and claim adjustment expenses - Beginning of Year	\$4,447,056	\$3,196,920
Incurred claims and claim adjustment expenses:		
Provision for insured events of the current year	2,106,026	2,277,913
Change in provision for insured events of prior years	(1,828,337)	499,001
Total incurred claims and claim adjustment expenses	277,689	2,776,914
Payments:		
Claims and claim adjustment expenses attributable to insured events of the current year	466,870	567,935
Claims and claim adjustment expenses attributable to insured events of prior years	1,137,615	958,843
Aggregate Adjustment		
Total Payments	1,604,485	1,526,778
Unpaid claims and claim adjustment expenses - End of Year	\$3,120,260	\$4,447,056

**NOTE 8 - DEFINED BENEFIT PENSION PLANS**

The Statewide retirement systems provide both pension benefits and other postemployment benefits (OPEB).

***Net Pension Liability/Asset and Net OPEB Asset***

The net pension liability/asset and the net OPEB asset reported on the statement of net position represents a liability or asset to employees for pensions and OPEB, respectively.

Pensions and OPEB are a component of exchange transactions – between an employer and its employees – of salaries and benefits for employee services. Pensions and OPEB are

## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

### NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

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provided to an employee – on a deferred-payment basis – as part of the total compensation package offered by an employer for employee services each financial period. The obligation to sacrifice resources for pensions is a present obligation because it was created as a result of employment exchanges that already have occurred.

The net pension liability/asset and the net OPEB liability/asset represent the Association's proportionate share of each pension/OPEB plan's collective actuarial present value of projected benefit payments attributable to past periods of service, net of each pension/OPEB plan's fiduciary net position. The net pension/OPEB liability/asset calculation is dependent on critical long-term variables, including estimated average life expectancies, earnings on investments, cost-of-living adjustments and others. While these estimates use the best information available, unknowable future events require adjusting this estimate annually.

The Ohio Revised Code limits the Association's obligation for this liability to annually required payments. The Association cannot control benefit terms or the manner in which pensions/OPEB are financed; however, the Association does receive the benefit of employees' services in exchange for compensation including pension and OPEB.

GASB 68/75 assumes the liability/asset is solely the obligation of the employer, because (1) they benefit from employee services; and (2) State statute requires funding to come from these employers. All pension contributions to date have come solely from these employers (which also includes pension costs paid in the form of withholdings from employees). The retirement systems may allocate a portion of the employer contributions to provide for these OPEB benefits. In addition, health care plan enrollees pay a portion of the health care costs in the form of a monthly premium. State statute requires the retirement systems to amortize unfunded pension liabilities within 30 years. If the pension amortization period exceeds 30 years, each retirement system's board must propose corrective action to the State legislature. Any resulting legislative change to benefits or funding could significantly affect the net pension/OPEB liability. Resulting adjustments to the net pension/OPEB liability would be effective when the changes are legally enforceable. The Ohio Revised Code permits, but does not require, the retirement systems to provide health care to eligible benefit recipients.

The proportionate share of each plan's unfunded benefits is presented as a long-term net pension/OPEB liability/asset on the accrual basis of accounting. Any liability for the contractually-required pension/OPEB contribution outstanding at the end of the year is included in accounts payable and accrued liabilities on the accrual basis of accounting.

The remainder of this note includes the pension disclosures. See Note 9 for the OPEB disclosures.

#### ***Plan Description - Ohio Public Employees Retirement System (OPERS)***

Plan Description - Association employees participate in the Ohio Public Employees Retirement System (OPERS). OPERS administers three separate pension plans. The

# MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

## NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

traditional pension plan is a cost-sharing, multiple-employer defined benefit pension plan. The member-directed plan is a defined contribution plan and the combined plan is a combination cost-sharing, multiple-employer defined benefit/defined contribution pension plan. Participating employers are divided into state, local, law enforcement and public safety divisions. While members in the state and local divisions may participate in all three plans, law enforcement and public safety divisions exist only within the traditional plan.

OPERS provides retirement, disability, survivor and death benefits, and annual cost of living adjustments to members of the traditional and combined plans. Authority to establish and amend benefits is provided by Chapter 145 of the Ohio Revised Code. OPERS issues a stand-alone financial report that includes financial statements, required supplementary information and detailed information about OPERS' fiduciary net position that may be obtained by visiting <https://www.opers.org/financial/reports.shtml>, by writing to the Ohio Public Employees Retirement System, 277 East Town Street, Columbus, Ohio 43215-4642, or by calling 800-222-7377.

Senate Bill (SB) 343 was enacted into law with an effective date of January 7, 2013. In the legislation, members in the traditional and combined plans were categorized into three groups with varying provisions of the law applicable to each group. The following table provides age and service requirements for retirement and the retirement formula applied to final average salary (FAS) for the three member groups under the traditional and combined plans as per the reduced benefits adopted by SB 343 (see OPERS Annual Report referenced above for additional information, including requirements for reduced and unreduced benefits):

<b>Group A</b> Eligible to retire prior to January 7, 2013 or five years after January 7, 2013	<b>Group B</b> 20 years of service credit prior to January 7, 2013 or eligible to retire ten years after January 7, 2013	<b>Group C</b> Members not in other Groups and members hired on or after January 7, 2013
<b>State and Local</b>	<b>State and Local</b>	<b>State and Local</b>
<b>Age and Service Requirements:</b> Age 60 with 60 months of service credit or Age 55 with 25 years of service credit	<b>Age and Service Requirements:</b> Age 60 with 60 months of service credit or Age 55 with 25 years of service credit	<b>Age and Service Requirements:</b> Age 57 with 25 years of service credit or Age 62 with 5 years of service credit
<b>Traditional Plan Formula:</b> 2.2% of FAS multiplied by years of service for the first 30 years and 2.5% for service years in excess of 30	<b>Traditional Plan Formula:</b> 2.2% of FAS multiplied by years of service for the first 30 years and 2.5% for service years in excess of 30	<b>Traditional Plan Formula:</b> 2.2% of FAS multiplied by years of service for the first 35 years and 2.5% for service years in excess of 35
<b>Combined Plan Formula:</b> 1% of FAS multiplied by years of service for the first 30 years and 1.25% for service years in excess of 30	<b>Combined Plan Formula:</b> 1% of FAS multiplied by years of service for the first 30 years and 1.25% for service years in excess of 30	<b>Combined Plan Formula:</b> 1% of FAS multiplied by years of service for the first 35 years and 1.25% for service years in excess of 35

Final Average Salary (FAS) represents the average of the three highest years of earnings over a member's career for Groups A and B. Group C is based on the average of the five highest years of earnings over a member's career.

Members who retire before meeting the age and years of service credit requirement for

## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

### NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

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unreduced benefits receive a percentage reduction in the benefit amount. The initial amount of a member's pension benefit is vested upon receipt of the initial benefit payment for calculation of an annual cost-of-living adjustment.

When a traditional plan benefit recipient has received benefits for 12 months, current law provides for an annual cost of living adjustment (COLA). This COLA is calculated on the base retirement benefit at the date of retirement and is not compounded. Members retiring under the combined plan receive a cost-of-living adjustment on the defined benefit portion of their pension benefit. For those who retired prior to January 7, 2013, the cost of living adjustment is 3 percent. For those retiring subsequent to January 7, 2013, beginning in calendar year 2019, current law provides that the COLA will be based on the average percentage increase in the Consumer Price Index, capped at 3.00%.

Defined contribution plan benefits are established in the plan documents, which may be amended by the Board. Member-directed plan and combined plan members who have met the retirement eligibility requirements may apply for retirement benefits. The amount available for defined contribution benefits in the combined plan consists of the member's contributions plus or minus the investment gains or losses resulting from the member's investment selections. Combined plan members wishing to receive benefits must meet the requirements for both the defined benefit and defined contribution plans. Member-directed participants must have attained the age of 55, have money on deposit in the defined contribution plan and have terminated public service to apply for retirement benefits. The amount available for defined contribution benefits in the member-directed plan consists of the members' contributions, vested employer contributions and investment gains or losses resulting from the members' investment selections. Employer contributions and associated investment earnings vest over a five-year period, at a rate of 20 percent each year. At retirement, members may select one of several distribution options for payment of the vested balance in their individual OPERS accounts. Options include the annuitization of the benefit (which includes joint and survivor options), partial lump-sum payments (subject to limitations), a rollover of the vested account balance to another financial institution, receipt of entire account balance, net of taxes withheld, or a combination of these options. When members choose to annuitize their defined contribution benefit, the annuitized portion of the benefit is reclassified to a defined benefit.

Beginning in 2022, the Combined Plan will be consolidated under the Traditional Pension Plan (defined benefit plan) and the Combined Plan option will no longer be available for new hires beginning in 2022.

Funding Policy - The Ohio Revised Code (ORC) provides statutory authority for member and employer contributions as follows:

# MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

## NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

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	State and Local
<b>2022 Statutory Maximum Contribution Rates</b>	
Employer	14.0 %
Employee *	10.0 %
<b>2022 Actual Contribution Rates</b>	
Employer:	
Pension	14.0 %
Post-employment Health Care Benefits **	0.0 %
Total Employer	14.0 %
Employee	10.0 %

\* This rate is determined by OPERS' Board and has no maximum rate established by ORC.

\*\* This employer health care rate is for the traditional and combined plans. The employer contribution for the member-directed plan is 4.00%.

Employer contribution rates are actuarially determined and are expressed as a percentage of covered payroll.

The Association's contractually required contribution for the Traditional Pension Plan, the Combined Plan and Member-Directed Plan was \$39,200 for 2022. Of this amount, \$783 is reported as accounts payable and accrued liabilities.

### ***Net Pension Liabilities/Assets, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions***

The net pension liability and net pension asset for OPERS was measured as of December 31, 2021, and the total pension liability or asset used to calculate the net pension liability or asset was determined by an actuarial valuation as of that date. The Association's proportion of the net pension liability or asset was based on the Association's share of contributions to the pension plan relative to the contributions of all participating entities.

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**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**

**NOTES TO THE BASIC FINANCIAL STATEMENTS  
FOR THE YEAR ENDED DECEMBER 31, 2022**

Following is information related to the proportionate share and pension expense:

	OPERS - Traditional	OPERS - Member- Directed	Total
Proportion of the net pension liability/asset prior measurement date	0.00218300%	0.01073300%	
Proportion of the net pension liability/asset current measurement date	<u>0.00165300%</u>	<u>0.01054700%</u>	
Change in proportionate share	<u>-0.00053000%</u>	<u>-0.00018600%</u>	
Proportionate share of the net pension liability	\$ 143,818	\$ -	\$ 143,818
Proportionate share of the net pension asset	-	(1,915)	(1,915)
Pension expense	(58,416)	(307)	(58,723)

At December 31, 2022, the Association reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	OPERS - Traditional	OPERS - Member- Directed	Total
<b>Deferred outflows of resources</b>			
Differences between expected and actual experience	\$ 7,331	\$ 1,885	\$ 9,216
Changes of assumptions	17,984	63	18,047
Changes in employer's proportionate percentage/ difference between employer contributions	1,468	-	1,468
Contributions subsequent to the measurement date	32,428	6,772	39,200
Total deferred outflows of resources	<u>\$ 59,211</u>	<u>\$ 8,720</u>	<u>\$ 67,931</u>

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# MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

## NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

	OPERS - Traditional	OPERS - Member- Directed	Total
<b>Deferred inflows of resources</b>			
Differences between expected and actual experience	\$ 3,154	\$ -	\$ 3,154
Net difference between projected and actual earnings on pension plan investments	171,062	435	171,497
Changes in employer's proportionate percentage/ difference between employer contributions	66,353	-	66,353
Total deferred inflows of resources	<u>\$ 240,569</u>	<u>\$ 435</u>	<u>\$ 241,004</u>

\$39,200 reported as deferred outflows of resources related to pension resulting from Association contributions subsequent to the measurement date will be recognized as a reduction of/increase to the net pension liability/asset in the year ending December 31, 2023.

Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pension will be recognized in pension expense as follows:

	OPERS - Traditional	OPERS - Member- Directed	Total
Year Ending December 31:			
2023	\$ (68,479)	\$ 192	\$ (68,287)
2024	(77,872)	143	(77,729)
2025	(40,224)	171	(40,053)
2026	(27,211)	175	(27,036)
2027	-	234	234
Thereafter	-	598	598
Total	<u>\$ (213,786)</u>	<u>\$ 1,513</u>	<u>\$ (212,273)</u>

### ***Actuarial Assumptions - OPERS***

Actuarial valuations of an ongoing plan involve estimates of the values of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and cost trends. Actuarially determined amounts are subject to continual review or modification as actual results are compared with past expectations and new estimates are made about the future.

Projections of benefits for financial-reporting purposes are based on the substantive plan (the plan as understood by the employers and plan members) and include the types of

## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

### NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

benefits provided at the time of each valuation. The total pension liability was determined by an actuarial valuation as of December 31, 2021, using the following actuarial assumptions applied to all periods included in the measurement in accordance with the requirements of GASB 67.

Key methods and assumptions used in the latest actuarial valuation, reflecting experience study results, prepared as of December 31, 2021, are presented below.

Wage inflation	
Current measurement date	2.75%
Prior measurement date	3.25%
Future salary increases, including inflation	
Current measurement date	2.75% to 10.75% including wage inflation
Prior measurement date	3.25% to 10.75% including wage inflation
COLA or ad hoc COLA	
Current measurement date	Pre 1/7/2013 retirees: 3.00%, simple Post 1/7/2013 retirees: 3.00%, simple through 2022, then 2.05% simple
Prior measurement date	Pre 1/7/2013 retirees: 3.00%, simple Post 1/7/2013 retirees: 0.50%, simple through 2021, then 2.15% simple
Investment rate of return	
Current measurement date	6.90%
Prior measurement date	7.20%
Actuarial cost method	Individual entry age

In July 2021, the OPERS Board adopted a change in COLA for Post-January 7, 2013 retirees, changing it from 0.50% simple through 2021 then 2.15% simple to 3.00% simple through 2022 then 2.05% simple.

Pre-retirement mortality rates are based on 130% of the Pub-2010 General Employee Mortality tables (males and females) for State and Local Government divisions and 170% of the Pub-2010 Safety Employee Mortality tables (males and females) for the Public Safety and Law Enforcement divisions. Post-retirement mortality rates are based on 115% of the PubG-2010 Retiree Mortality Tables (males and females) for all divisions. Post-retirement mortality rates for disabled retirees are based on the PubNS-2010 Disabled Retiree Mortality Tables (males and females) for all divisions. For all of the previously described tables, the base year is 2010 and mortality rates for a particular calendar year are determined by applying the MP-2020 mortality improvement scales (males and females) to all of these tables.

The most recent experience study was completed for the five-year period ended December 31, 2020.

During 2021, OPERS managed investments in three investment portfolios: the Defined Benefit portfolio, the Health Care portfolio and the Defined Contribution portfolio. The Defined Benefit portfolio contains the investment assets of the Traditional Pension Plan, the defined benefit component of the Combined Plan and the annuitized accounts of the

## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

### NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

Member-Directed Plan. Within the Defined Benefit portfolio, contributions into the plans are all recorded at the same time, and benefit payments all occur on the first of the month. Accordingly, the money-weighted rate of return is considered to be the same for all plans within the portfolio. The annual money-weighted rate of return expressing investment performance, net of investment expenses and adjusted for the changing amounts actually invested, for the Defined Benefit portfolio was a gain of 15.3% for 2021.

The allocation of investment assets within the Defined Benefit portfolio is approved by the Board of Trustees as outlined in the annual investment plan. Plan assets are managed on a total return basis with a long-term objective of achieving and maintaining a fully funded status for the benefits provided through the defined benefit pension plans. The long-term expected rate of return on defined benefit investment assets was determined using a building-block method in which best-estimate ranges of expected future real rates of return are developed for each major asset class. These ranges are combined to produce the long-term expected real rate of return by weighting the expected future real rates of return by the target asset allocation percentage, adjusted for inflation. Best estimates of arithmetic real rates of return were provided by the Board's investment consultant.

For each major asset class that is included in the Defined Benefit portfolio's target asset allocation as of December 31, 2021, these best estimates are summarized in the following table:

Asset Class	Target Allocation	Weighted Average Long-Term Expected Real Rate of Return (Arithmetic)
Fixed income	24.00 %	1.03 %
Domestic equities	21.00	3.78
Real estate	11.00	3.66
Private equity	12.00	7.43
International equities	23.00	4.88
Risk Parity	5.00	2.92
Other investments	4.00	2.85
Total	100.00 %	4.21 %

**Discount Rate** - The discount rate used to measure the total pension liability/asset was 6.90%, post-experience study results, for the Traditional Pension Plan, the Combined Plan and Member-Directed Plan. The discount rate used to measure total pension liability prior to December 31, 2021 was 7.20%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members and those of the contributing employers are made at the contractually required rates, as actuarially determined. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefits payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments for the Traditional Pension Plan, Combined Plan and Member-Directed Plan was applied to all periods of projected benefit payments to determine the total pension liability.

## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

### NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

***Sensitivity of the Association's Proportionate Share of the Net Pension Liability/Asset to Changes in the Discount Rate*** - The following table presents the proportionate share of the net pension liability/asset calculated using the current period discount rate assumption of 6.90%, as well as what the proportionate share of the net pension liability/asset would be if it were calculated using a discount rate that is one-percentage-point lower (5.90%) or one-percentage-point higher (7.90%) than the current rate:

	1% Decrease	Current Discount Rate	1% Increase
Association's proportionate share of the net pension liability (asset):			
Traditional Pension Plan	\$ 379,182	\$ 143,818	\$ (52,036)
Member-Directed Plan	(1,688)	(1,915)	(2,109)

## NOTE 9 – DEFINED BENEFIT OPEB PLANS

### ***Net OPEB Asset***

See Note 8 for a description of the net OPEB asset.

### ***Plan Description - Ohio Public Employees Retirement System (OPERS)***

Plan Description - The Ohio Public Employees Retirement System (OPERS) administers three separate pension plans: the traditional pension plan, a cost-sharing, multiple-employer defined benefit pension plan; the member-directed plan, a defined contribution plan; and the combined plan, a cost-sharing, multiple-employer defined benefit pension plan that has elements of both a defined benefit and defined contribution plan.

OPERS maintains a cost-sharing, multiple-employer defined benefit post-employment health care trust, which funds multiple health care plans including medical coverage, prescription drug coverage and deposits to a Health Reimbursement Arrangement to qualifying benefit recipients of both the traditional pension and the combined plans. Currently, Medicare-eligible retirees are able to select medical and prescription drug plans from a range of options and may elect optional vision and dental plans. Retirees and eligible dependents enrolled in Medicare Parts A and B have the option to enroll in a Medicare supplemental plan with the assistance of the OPERS Medicare Connector. The OPERS Medicare Connector is a relationship with a vendor selected by OPERS to assist retirees, spouses and dependents with selecting a medical and pharmacy plan. Monthly allowances, based on years of service and the age at which the retiree first enrolled in OPERS coverage, are deposited into an HRA. For non-Medicare retirees and eligible dependents, OPERS sponsors medical and prescription coverage through a professionally managed self-insured plan. An allowance to offset a portion of the monthly premium is offered to retirees and eligible dependents. The allowance is based on the retiree's years of service and age when they first enrolled in OPERS coverage.

## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

### NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

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Medicare-eligible retirees who choose to become re-employed or survivors who become employed in an OPERS-covered position are prohibited from participating in an HRA. For this group of retirees, OPERS sponsors secondary coverage through a professionally managed self-insured program. Retirees who enroll in this plan are provided with a monthly allowance to offset a portion of the monthly premium. Medicare-eligible spouses and dependents can also enroll in this plan as long as the retiree is enrolled.

OPERS provides a monthly allowance for health care coverage for eligible retirees and their eligible dependents. The base allowance is determined by OPERS.

The health care trust is also used to fund health care for member-directed plan participants, in the form of a Retiree Medical Account (RMA). At retirement or separation, member directed plan participants may be eligible for reimbursement of qualified medical expenses from their vested RMA balance.

Effective January 1, 2022, OPERS discontinued the group plans currently offered to non-Medicare retirees and re-employed retirees. Instead, eligible non-Medicare retirees will select an individual medical plan. OPERS will provide a subsidy or allowance via an HRA allowance to those retirees who meet health care eligibility requirements. Retirees will be able to seek reimbursement for plan premiums and other qualified medical expenses.

In order to qualify for postemployment health care coverage, age and service retirees under the traditional pension and combined plans must have twenty or more years of qualifying Ohio service credit with a minimum age of 60, or generally 30 years of qualifying service at any age. Health care coverage for disability benefit recipients and qualified survivor benefit recipients is available. Current retirees eligible (or who became eligible prior to January 1, 2022) to participate in the OPERS health care program will continue to be eligible after January 1, 2022. Eligibility requirements will change for those retiring after January 1, 2022, with differing eligibility requirements for Medicare retirees and non-Medicare retirees. The health care coverage provided by OPERS meets the definition of an Other Post Employment Benefit (OPEB) as described in GASB Statement 75. See OPERS' Annual Comprehensive Financial Report referenced below for additional information.

The Ohio Revised Code permits, but does not require, OPERS to provide health care to its eligible benefit recipients. Authority to establish and amend health care coverage is provided to the Board in Chapter 145 of the Ohio Revised Code.

Disclosures for the health care plan are presented separately in the OPERS financial report. Interested parties may obtain a copy by visiting <https://www.opers.org/financial/reports.shtml>, by writing to OPERS, 277 East Town Street, Columbus, Ohio 43215-4642, or by calling (614) 222-5601 or 800-222-7377.

Funding Policy - The Ohio Revised Code provides the statutory authority allowing public employers to fund postemployment health care through their contributions to OPERS. When funding is approved by OPERS' Board of Trustees, a portion of each employer's

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**

**NOTES TO THE BASIC FINANCIAL STATEMENTS  
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contribution to OPERS is set aside to fund OPERS health care plans. Beginning in 2018, OPERS no longer allocated a portion of its employer contributions to health care for the traditional plan and the combined plan.

Employer contribution rates are expressed as a percentage of the earnable salary of active members. In 2022, state and local employers contributed at a rate of 14.00% of earnable salary and public safety and law enforcement employers contributed at 18.10%. These are the maximum employer contribution rates permitted by the Ohio Revised Code. Active member contributions do not fund health care.

Each year, the OPERS Board determines the portion of the employer contribution rate that will be set aside to fund health care plans. For 2022, OPERS did not allocate any employer contribution to health care for members in the Traditional Pension Plan and Combined Plan. The OPERS Board is also authorized to establish rules for the retiree or their surviving beneficiaries to pay a portion of the health care provided. Payment amounts vary depending on the number of covered dependents and the coverage selected. The employer contribution as a percentage of covered payroll deposited into the RMA for participants in the Member-Directed Plan for 2022 was 4.00%.

Employer contribution rates are actuarially determined and are expressed as a percentage of covered payroll. The Association's contractually required contribution was \$2,709 for 2022. Of this amount, \$54 is reported as accounts payable and accrued liabilities.

***Net OPEB Asset, OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB***

The net OPEB asset and total OPEB liability for OPERS were determined by an actuarial valuation as of December 31, 2020, rolled forward to the measurement date of December 31, 2021, by incorporating the expected value of health care cost accruals, the actual health care payment, and interest accruals during the year. The Association's proportion of the net OPEB asset was based on the Association's share of contributions to the retirement plan relative to the contributions of all participating entities.

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**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**

NOTES TO THE BASIC FINANCIAL STATEMENTS  
FOR THE YEAR ENDED DECEMBER 31, 2022

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Following is information related to the proportionate share and OPEB expense:

	<u>OPERS</u>
Proportion of the net OPEB liability/asset prior measurement date	0.00245900%
Proportion of the net OPEB liability/asset current measurement date	<u>0.00196300%</u>
Change in proportionate share	<u>-0.00049600%</u>
Proportionate share of the net OPEB asset	\$ (61,484)
OPEB expense	(50,256)

At December 31, 2022, the Association reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	<u>OPERS</u>
<b>Deferred outflows of resources</b>	
Changes in employer's proportionate percentage/ difference between employer contributions	\$ 2,506
Contributions subsequent to the measurement date	2,709
Total deferred outflows of resources	<u>\$ 5,215</u>



**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.****NOTES TO THE BASIC FINANCIAL STATEMENTS  
FOR THE YEAR ENDED DECEMBER 31, 2022**

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	<u>OPERS</u>
<b>Deferred inflows of resources</b>	
Differences between expected and actual experience	\$ 9,326
Net difference between projected and actual earnings on OPEB plan investments	29,311
Changes of assumptions	24,889
Changes in employer's proportionate percentage/ difference between employer contributions	7,052
Total deferred inflows of resources	<u><u>\$ 70,578</u></u>

\$2,709 reported as deferred outflows of resources related to OPEB resulting from Association contributions subsequent to the measurement date will be recognized as a reduction of/increase to the net OPEB liability/asset in the year ending December 31, 2023.

Other amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

	<u>OPERS</u>
Year Ending December 31:	
2023	\$ (41,409)
2024	(16,051)
2025	(6,404)
2026	<u>(4,208)</u>
Total	<u><u>\$ (68,072)</u></u>

***Actuarial Assumptions - OPERS***

Actuarial valuations of an ongoing plan involve estimates of the values of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and cost trends. Actuarially determined amounts are subject to continual review or modification as actual results are compared with past expectations and new estimates are made about the future.

# MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

## NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

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Projections of health care costs for financial reporting purposes are based on the substantive plan (the plan as understood by the employers and plan members) and include the types of coverage provided at the time of each valuation and the historical pattern of sharing of costs between OPERS and plan members. The total OPEB liability was determined by an actuarial valuation as of December 31, 2020, rolled forward to the measurement date of December 31, 2021.

The actuarial valuation used the following actuarial assumptions applied to all prior periods included in the measurement in accordance with the requirements of GASB 74:

Wage Inflation	
Current measurement date	2.75%
Prior Measurement date	3.25%
Projected Salary Increases, including inflation	
Current measurement date	2.75 to 10.75%
	including wage inflation
Prior Measurement date	3.25 to 10.75%
	including wage inflation
Single Discount Rate:	
Current measurement date	6.00%
Prior Measurement date	6.00%
Investment Rate of Return	
Current measurement date	6.00%
Prior Measurement date	6.00%
Municipal Bond Rate	
Current measurement date	1.84%
Prior Measurement date	2.00%
Health Care Cost Trend Rate	
Current measurement date	5.50% initial, 3.50% ultimate in 2034
Prior Measurement date	8.50% initial, 3.50% ultimate in 2035
Actuarial Cost Method	Individual Entry Age Normal

Pre-retirement mortality rates are based on 130% of the Pub-2010 General Employee Mortality tables (males and females) for State and Local Government divisions and 170% of the Pub-2010 Safety Employee Mortality tables (males and females) for the Public Safety and Law Enforcement divisions. Post-retirement mortality rates are based on 115% of the PubG-2010 Retiree Mortality Tables (males and females) for all divisions. Post-retirement mortality rates for disabled retirees are based on the PubNS-2010 Disabled

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**

**NOTES TO THE BASIC FINANCIAL STATEMENTS  
FOR THE YEAR ENDED DECEMBER 31, 2022**

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Retiree Mortality Tables (males and females) for all divisions. For all of the previously described tables, the base year is 2010 and mortality rates for a particular calendar year are determined by applying the MP-2020 mortality improvement scales (males and females) to all of these tables.

The most recent experience study was completed for the five-year period ended December 31, 2020.

During 2021, OPERS managed investments in three investment portfolios: the Defined Benefit portfolio, the Health Care portfolio and the Defined Contribution portfolio. The Health Care portfolio includes the assets for health care expenses for the Traditional Pension Plan, Combined Plan and Member-Directed Plan eligible members. Within the Health Care portfolio, contributions into the plans are assumed to be received continuously throughout the year based on the actual payroll payable at the time contributions are made, and health care-related payments are assumed to occur mid-year. Accordingly, the money-weighted rate of return is considered to be the same for all plans within the portfolio. The annual money-weighted rate of return expressing investment performance, net of investment expenses and adjusted for the changing amounts actually invested, for the Health Care portfolio was a gain of 14.3% for 2021.

The allocation of investment assets within the Health Care portfolio is approved by the Board of Trustees as outlined in the annual investment plan. Assets are managed on a total return basis with a long-term objective of continuing to offer a sustainable health care program for current and future retirees. OPERS' primary goal is to achieve and maintain a fully funded status for the benefits provided through the defined pension plans. Health care is a discretionary benefit. The long-term expected rate of return on health care investment assets was determined using a building-block method in which best-estimate ranges of expected future real rates of return are developed for each major asset class. These ranges are combined to produce the long-term expected real rate of return by weighting the expected future real rates of return by the target asset allocation percentage, adjusted for inflation.

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# MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

## NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

For each major asset class that is included in the Health Care's portfolio's target asset allocation as of December 31, 2021, these best estimates are summarized in the following table:

Asset Class	Target Allocation	Weighted Average Long-Term Expected Real Rate of Return (Arithmetic)
Fixed Income	34.00 %	0.91 %
Domestic equities	25.00	3.78
Real Estate Investment Trusts (REITs)	7.00	3.71
International equities	25.00	4.88
Risk parity	2.00	2.92
Other investments	7.00	1.93
Total	100.00 %	3.45 %

**Discount Rate** - A single discount rate of 6.00% was used to measure the total OPEB liability on the measurement date of December 31, 2021. A single discount rate of 6.00% was used to measure the total OPEB liability on the measurement date of December 31, 2021. Projected benefit payments are required to be discounted to their actuarial present value using a single discount rate that reflects (1) a long-term expected rate of return on OPEB plan investments (to the extent that the health care fiduciary net position is projected to be sufficient to pay benefits), and (2) a tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate are not met). This single discount rate was based on the actuarial assumed rate of return on the health care investment portfolio of 6.00% and a municipal bond rate of 1.84%. The projection of cash flows used to determine this single discount rate assumed that employer contributions will be made at rates equal to the actuarially determined contribution rate. Based on these assumptions, the health care fiduciary net position and future contributions were sufficient to finance health care costs through the year 2121. As a result, the actuarial assumed long-term expected rate of return on health care investments was applied to projected costs through the year 2121, the duration of the projection period through which projected health care payments are fully funded.

**Sensitivity of the Association's Proportionate Share of the Net OPEB Asset to Changes in the Discount Rate** - The following table presents the proportionate share of the net OPEB asset calculated using the single discount rate of 6.00%, as well as what the proportionate share of the net OPEB asset would be if it were calculated using a discount rate that is one-percentage-point lower (5.00%) or one-percentage-point higher (7.00%) than the current rate:

	1% Decrease	Current Discount Rate	1% Increase
Association's proportionate share of the net OPEB asset	\$ 36,158	\$ 61,484	\$ 82,505

## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.

### NOTES TO THE BASIC FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

***Sensitivity of the Association's Proportionate Share of the Net OPEB Asset to Changes in the Health Care Cost Trend Rate*** - Changes in the health care cost trend rate may also have a significant impact on the net OPEB asset. The following table presents the net OPEB asset calculated using the assumed trend rates, and the expected net OPEB asset if it were calculated using a health care cost trend rate that is 1.00% lower or 1.00% higher than the current rate.

Retiree health care valuations use a health care cost trend assumption with changes over several years built into that assumption. The near-term rates reflect increases in the current cost of healthcare; the trend starting in 2022 is 5.50%. If this trend continues for future years, the projection indicates that years from now virtually all expenditures will be for health care. A more reasonable alternative is the health care cost trend will decrease to a level at, or near, wage inflation. On this basis, the actuaries project premium rate increases will continue to exceed wage inflation for approximately the next decade, but by less each year, until leveling off at an ultimate rate, assumed to be 3.50% in the most recent valuation.

	<u>1% Decrease</u>	<u>Current Health Care Trend Rate Assumption</u>	<u>1% Increase</u>
Association's proportionate share of the net OPEB asset	\$ 62,149	\$ 61,484	\$ 60,696

#### NOTE 10 – LITIGATION AND CLAIMS

The Association is party to various legal proceedings, which normally occur in the course of claims processing operations. Management believes that the outcome of such claims has been adequately accrued in the claims reserve liability, and excess will be covered by insurance carriers that provide excess insurance and reinsurance contracts. Nevertheless, due to uncertainties in the settlement process, it is at least reasonably possible that management's view of the outcome could change materially in the near term.

## REQUIRED SUPPLEMENTARY INFORMATION

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**  
**REQUIRED SUPPLEMENTARY INFORMATION**  
**COMPARATIVE SCHEDULE OF CLAIM DEVELOPMENT, EARNED ASSESSMENTS AND UNALLOCATED EXPENSES**  
**FOR THE YEARS ENDED DECEMBER 31, 2022, 2021, 2020, 2019, 2018, 2017, 2016, 2015, 2014 AND 2013**

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Earned assessments and interest income:										
Earned	\$5,507,632	\$5,237,654	\$5,539,875	\$5,167,149	\$4,551,986	\$4,487,270	\$4,243,039	\$4,223,535	\$4,908,192	\$4,316,800
Ceded	2,362,508	1,808,446	1,473,388	1,125,633	988,162	947,406	864,407	885,468	878,317	870,249
Net	\$3,145,124	\$3,429,208	\$4,066,487	\$4,041,516	\$3,563,824	\$3,539,864	\$3,378,632	\$3,338,067	\$4,029,875	\$3,446,551
Unallocated loss expenses	\$631,270	\$885,455	\$854,427	\$987,998	\$881,436	\$835,464	\$826,140	\$758,871	\$757,719	\$751,099
Original estimates ultimate incurred claims and expenses for the policy year, including members' deductibles	\$2,461,000	\$2,623,000	\$1,970,000	\$1,893,000	\$2,051,000	\$2,055,000	\$1,413,000	\$1,459,000	\$2,771,000	\$1,798,849
Cummulative incurred claims, net of reinsurance, including members' deductibles, as of:										
End of policy year	\$1,296,798	\$1,395,759	\$345,736	\$768,547	\$960,849	\$643,802	\$577,160	\$626,239	\$1,480,995	\$764,655
One year later		1,308,088	1,453,639	1,025,943	938,593	1,115,953	998,670	947,321	1,626,822	952,440
Two years later			1,782,472	1,336,955	1,149,365	1,234,883	1,090,294	1,018,542	2,228,715	1,180,592
Three years later				1,456,056	1,524,356	1,200,098	1,143,625	1,049,615	2,217,389	1,421,688
Four years later					1,380,781	1,214,608	1,297,611	1,059,615	2,237,389	1,435,920
Five years later						1,214,608	1,346,174	1,056,165	2,207,066	1,428,162
Six years later							1,294,423	1,056,165	2,025,685	1,428,162
Seven years later								1,056,165	2,025,685	1,428,162
Eight years later									2,025,685	1,428,162
Nine years later										1,428,162
Re-estimated ultimate incurred claims and expenses, including members' deductibles:										
End of policy year	\$2,461,000	\$2,623,000	\$1,970,000	\$1,893,000	\$2,051,000	\$2,055,000	\$1,413,000	\$1,459,000	\$2,771,000	\$1,798,849
One year later		1,849,000	2,440,000	1,778,000	1,649,419	1,827,000	1,769,000	1,502,478	2,334,000	1,621,700
Two years later			2,002,816	1,796,000	1,482,656	1,621,901	1,475,758	1,277,747	2,637,033	1,431,006
Three years later				1,575,639	1,718,312	1,433,233	1,384,103	1,223,584	2,417,033	1,547,491
Four years later					1,424,866	1,214,595	1,369,103	1,133,584	2,327,033	1,506,279
Five years later						1,214,595	1,440,103	1,047,759	2,227,033	1,419,374
Six years later							1,318,103	1,047,759	2,192,900	1,419,374
Seven years later								1,047,759	2,192,900	1,419,374
Eight years later									2,192,900	1,419,374
Nine years later										1,419,374
Increase (decrease) in estimate incurred claims and expenses from original estimate		(\$774,000)	\$32,816	(\$317,361)	(\$626,134)	(\$840,405)	(\$94,897)	(\$411,241)	(\$578,100)	(\$379,475)

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION, INC.**

## Reconciliation of Claim Liabilities by Type of Contract

For the Year Ended December 31, 2022

	General Liability	Automobile Liability	Property	Total
Unpaid claims and claim adjustment expenses - Beginning of Year - including Aggregate Adjustment	\$3,266,960	\$174,782	\$1,005,315	\$4,447,057
Inurred claims and claim adjustment expenses:				
Provision for insured events of the current year	988,928	279,915	837,185	\$2,106,028
Change in provision for insured events of prior years	-1,414,539	-99,502	-314,296	-1,828,337
Total incurred claims and claim adjustment expenses	-425,611	180,413	522,889	277,691
Payments:				
Claims and claim adjustment expenses attributable to insured events of the current year	31,769	19,659	415,442	\$466,870
Claims and claim adjustment expenses attributable to insured events of prior years	521,284	32,535	583,797	1,137,616
Total Payments	553,053	52,194	999,239	1,604,486
Unpaid claims and claim adjustment expenses - End of Year	\$2,288,296	\$303,001	\$528,965	\$3,120,262



**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION**  
**SCHEDULES OF THE REQUIRED SUPPLEMENTARY INFORMATION**  
**SCHEDULE OF THE ASSOCIATION'S PROPORTIONATE SHARE OF**  
**THE NET PENSION LIABILITY/NET PENSION ASSET**  
**OHIO PUBLIC EMPLOYEES RETIREMENT SYSTEM (OPERS)**  
**LAST NINE YEARS <sup>(1)</sup>**

	<b>2022</b>	<b>2021</b>	<b>2020</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>
<i>Traditional Plan:</i>									
Association's proportion of the net pension liability	0.001653%	0.002183%	0.002123%	0.002082%	0.002069%	0.002152%	0.002093%	0.002411%	0.002411%
Association's proportionate share of the net pension liability	\$143,818	\$323,255	\$419,625	\$570,218	\$324,586	\$488,683	\$362,534	\$289,865	\$283,973
Association's covered payroll	\$231,679	\$262,950	\$346,736	\$281,800	\$273,031	\$266,575	\$285,853	\$301,763	\$337,396
Association's proportionate share of the net pension liability as a percentage of its covered payroll	62.08%	122.93%	121.02%	202.35%	118.88%	183.32%	126.83%	96.06%	84.17%
Plan fiduciary net position as a percentage of the total pension liability	92.62%	86.88%	82.17%	74.70%	84.66%	77.25%	81.08%	86.45%	86.36%
<i>Member Directed Plan:</i>									
Association's proportion of the net pension asset	0.010547%	0.010733%	0.010668%	0.009958%	0.010132%	0.011055%	0.010468%		
Association's proportionate share of the net pension asset	\$1,915	\$1,957	\$403	\$227	\$354	\$46	\$40		
Association's covered payroll	\$66,120	\$64,460	\$63,410	\$56,920	\$55,540	\$57,389	\$73,642		
Association's proportionate share of the net pension asset as a percentage of its covered payroll	2.90%	3.04%	0.64%	40.00%	0.64%	0.08%	0.05%		
Plan fiduciary net position as a percentage of the total pension asset	171.84%	188.21%	118.84%	113.42%	124.45%	103.40%	103.91%		

(1) Information prior to 2014 was unavailable for the Traditional Plan.

Information prior to 2016 was unavailable for the Member Directed Plan.

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Amounts presented for each year were determined as of the Association's measurement date which is the prior year-end.

SEE ACCOMPANYING NOTES TO THE REQUIRED SUPPLEMENTARY INFORMATION

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION**  
**SCHEDULES OF THE REQUIRED SUPPLEMENTARY INFORMATION**

**SCHEDULE OF ASSOCIATION'S PENSION CONTRIBUTIONS**  
**OHIO PUBLIC EMPLOYEES RETIREMENT SYSTEM (OPERS)**

LAST TEN YEARS <sup>(1)</sup>

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
<i>Traditional Plan:</i>										
Contractually required contribution	\$32,428	\$32,435	\$36,813	\$48,543	\$39,452	\$35,494	\$31,989	\$34,302	\$36,212	\$43,861
Contributions in relation to the contractually required contribution	(32,428)	(32,435)	(36,813)	(48,543)	(39,452)	(35,494)	(31,989)	(34,302)	(36,212)	(43,861)
Contribution deficiency (excess)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Association's covered payroll	\$231,629	\$231,679	\$262,950	\$346,736	\$303,477	\$295,786	\$266,571	\$285,854	\$278,558	\$438,608
Contributions as a percentage of covered payroll	14.00%	14.00%	14.00%	14.00%	13.00%	12.00%	12.00%	12.00%	13.00%	10.00%
<i>Member Directed Plan:</i>										
Contractually required contribution	\$6,772	\$6,612	\$6,446	\$6,341	\$5,692	\$5,554	\$5,452	\$6,996		
Contributions in relation to the contractually required contribution	(6,772)	(6,612)	(6,341)	(6,341)	(5,692)	(5,554)	(5,452)	(6,996)		
Contribution deficiency (excess)	\$ -	\$ -	\$ 105	\$ -	\$ -	\$ -	\$ -	\$ -		
Association's covered payroll	\$67,720	\$66,120	\$64,460	\$63,410	\$56,920	\$58,463	\$57,389	\$73,642		
Contributions as a percentage of covered payroll	10.00%	10.00%	10.00%	10.00%	10.00%	9.50%	9.50%	9.50%		

(1) Information prior to 2015 was unavailable for the Member Directed Plan.

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

SEE ACCOMPANYING NOTES TO THE REQUIRED SUPPLEMENTARY INFORMATION

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION**

**SCHEDULES OF THE REQUIRED SUPPLEMENTARY INFORMATION**

**SCHEDULE OF THE ASSOCIATION'S PROPORTIONATE SHARE OF  
THE NET OPEB LIABILITY/ASSET  
OHIO PUBLIC EMPLOYEES RETIREMENT SYSTEM (OPERS)**

LAST SIX YEARS <sup>(1)</sup>

	<u>2022</u>	<u>2021</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
Association's proportion of the net OPEB liability	0.001963%	0.002459%	0.002397%	0.002331%	0.002320%	0.002420%
Association's proportionate share of the net OPEB (asset) liability	(\$61,484)	(\$43,809)	\$331,088	\$303,907	\$251,935	\$244,379
Association's covered payroll	\$297,799	\$327,410	\$410,146	\$338,720	\$328,571	\$323,964
Association's proportionate share of the net OPEB asset/liability as a percentage of its covered payroll	20.65%	13.38%	80.72%	89.72%	76.68%	75.43%
Plan fiduciary net position as a percentage of the total OPEB asset/liability	128.23%	115.57%	47.80%	46.33%	54.14%	54.05%

(1) Information prior to 2017 was unavailable.

Schedule is intended to show information for 10 years.

Additional years will be displayed as they become available.

SEE ACCOMPANYING NOTES TO THE REQUIRED SUPPLEMENTARY INFORMATION

**MIAMI VALLEY RISK MANAGEMENT ASSOCIATION**

SCHEDULES OF THE REQUIRED SUPPLEMENTARY INFORMATION

SCHEDULE OF ASSOCIATION'S OPEB CONTRIBUTIONS  
OHIO PUBLIC EMPLOYEES RETIREMENT SYSTEM (OPERS)

LAST TEN YEARS

	<b>2022</b>	<b>2021</b>	<b>2020</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>
Contractually required contribution	\$2,709	\$2,645	\$2,578	\$2,537	\$2,277	\$4,951	\$7,913	\$6,157	\$6,116	\$3,174
Contributions in relation to the contractually required contribution	(2,709)	(2,645)	(2,578)	(2,537)	(2,277)	(4,951)	(7,913)	(6,157)	(6,116)	(3,174)
Contribution deficiency (excess)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Association's covered payroll	\$299,349	\$297,799	\$327,410	\$410,146	\$360,397	\$354,249	\$323,960	\$359,496	\$278,558	\$438,608
Contributions as a percentage of covered payroll	0.90%	0.89%	0.79%	0.62%	0.63%	1.40%	2.44%	1.71%	2.20%	0.72%

SEE ACCOMPANYING NOTES TO THE REQUIRED SUPPLEMENTARY INFORMATION

## MIAMI VALLEY RISK MANAGEMENT ASSOCIATION

### NOTES TO THE REQUIRED SUPPLEMENTARY INFORMATION FOR THE YEAR ENDED DECEMBER 31, 2022

#### PENSION

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##### *OHIO PUBLIC EMPLOYEES RETIREMENT SYSTEM (OPERS)*

###### *Changes in benefit terms :*

- There were no changes in benefit terms from the amounts reported for 2014.
- There were no changes in benefit terms from the amounts reported for 2015.
- There were no changes in benefit terms from the amounts reported for 2016.
- There were no changes in benefit terms from the amounts reported for 2017.
- There were no changes in benefit terms from the amounts reported for 2018.
- There were no changes in benefit terms from the amounts reported for 2019.
- There were no changes in benefit terms from the amounts reported for 2020.
- There were no changes in benefit terms from the amounts reported for 2021.
- There were no changes in benefit terms from the amounts reported for 2022.

###### *Changes in assumptions :*

- There were no changes in assumptions for 2014.
- There were no changes in assumptions for 2015.
- There were no changes in assumptions for 2016.
- For 2017, the following were the most significant changes of assumptions that affected the total pension liability since the prior measurement date: (a) reduction in the actuarially assumed rate of return from 8.00% down to 7.50%, (b) for defined benefit investments, decreasing the wage inflation from 3.75% to 3.25% and (c) changing the future salary increases from a range of 4.25%-10.05% to 3.25%-10.75%.
- There were no changes in assumptions for 2018.
- For 2019, the following were the most significant changes of assumptions that affected the total pension liability since the prior measurement date: (a) the assumed rate of return and discount rate were reduced from 7.50% down to 7.20%.
- There were no changes in assumptions for 2020.
- There were no changes in assumptions for 2021.

- For 2022, the following were the most significant changes of assumptions that affected the total pension liability since the prior measurement date: (a) wage inflation was changed from 3.25% to 2.75%, (b) future salary increases, including inflation were changed from 3.25%-10.75% to 2.75%-10.75%, (c) COLA for post 1/7/2013 retirees were changed from 0.50%, simple through 2021, then 2.15% simple to 3.00%, simple through 2022, then 2.05% simple and (d) the actuarially assumed rate of return was changed from 7.20% to 6.90%.

*Changes in benefit terms :*

- There were no changes in benefit terms from the amounts reported for 2017.
- There were no changes in benefit terms from the amounts reported for 2018.
- There were no changes in benefit terms from the amounts reported for 2019.
- There were no changes in benefit terms from the amounts reported for 2020.
- For 2021, the following were the most significant changes in benefit terms since the prior measurement date: the Board approved several changes to the health care plan offered to Medicare and non-Medicare retirees in efforts to decrease costs and increase the solvency of the health care Plan. These changes are effective January 1, 2022 and include changes to base allowances and eligibility for Medicare retirees, as well as replacing OPERS-sponsored medical plans for non-Medicare retirees with monthly allowances, similar to the program for Medicare retirees. These changes are reflected in the December 31, 2020 measurement date health care valuation. These changes significantly decreased the total OPEB liability for the measurement date December 31, 2020.
- There were no changes in benefit terms from the amounts reported for 2022.

*Changes in assumptions :*

- There were no changes in methods and assumptions used in the calculation of actuarial determined contributions for 2017.
- For 2018, the following were the most significant changes of assumptions that affected the total OPEB liability since the prior measurement date: (a) reduction in the actuarially assumed rate of return from 4.23% down to 3.85%.
- For 2019, the following were the most significant changes of assumptions that affect the total OPEB liability since the prior measurement date: (a) the discount rate was increased from 3.85% up to 3.96%, (b) The investment rate of return was decreased from 6.50% percent down to 6.00%, (c) the municipal bond rate was increased from 3.31% up to 3.71% and (d) the health care cost trend rate was increased from 7.50%, initial/3.25%, ultimate in 2028 up to 10.00%, initial/3.25% ultimate in 2029.
- For 2020, the following were the most significant changes of assumptions that affect the total OPEB liability since the prior measurement date: (a) the discount rate was decreased from 3.96% up to 3.16%, (b) the municipal bond rate was decreased from 3.71% up to 2.75% and (c) the health care cost trend rate was increased from 10.00%, initial/3.25%, ultimate in 2029 up to 10.50%, initial/3.50% ultimate in 2030.

- For 2021, the following were the most significant changes of assumptions that affect the total OPEB liability since the prior measurement date: (a) the discount rate was increased from 3.16% up to 6.00%, (b) the municipal bond rate was decreased from 2.75% up to 2.00% and (c) the health care cost trend rate was decreased from 10.00%, initial/3.50%, ultimate in 2030 down to 8.50%, initial/3.50% ultimate in 2035.
- For 2022, the following were the most significant changes of assumptions that affect the total OPEB liability since the prior measurement date: (a) wage inflation changed from 3.25% to 2.75%, (b) projected salary increases, including inflation changed from 3.25%-10.75% to 2.75%-10.75%, (c) the municipal bond rate was changed from 2.00% to 1.84% and (d) the health care cost trend rate was changed from 8.50% initial, 3.50% ultimate in 2035 to 5.50% initial, 3.50% ultimate in 2034.

## STATISTICAL SECTION



Miami Valley Risk Management Association  
Statistical Section  
December 31, 2022

This section of Miami Valley Risk Management's annual comprehensive financial report provides users with additional historical perspective, context, and detail to assist in using the information in the financial statements, notes to financial statements and required supplementary information to understand and assess the Association's overall financial health.

<u>Contents</u>	<u>Page</u>
Financial Trends Information (Schedules 1, 2 & 3)	53-55
These schedules contain trend information to help the reader understand and assess how the Association's financial position has changed over time.	
Revenue Capacity Information (Schedule 4)	56
This schedule contains information to help the reader understand the sources of the Association's revenues.	
Demographic and Economic Information (Schedules 5-28)	57-84
These schedules contain information related to the demographics of the region as well as the Association's members' exposures, which determine each member's annual contribution. These schedules are intended to assist the reader in understanding the changing environment of the Association and to provide comparisons among its members.	
Operating Information (Schedule 29)	85
This schedule contains information about the Association's operations and resources to help the reader understand how the information in the financial report relates to the services the Association provides and the activities it performs.	

Note: The Association has no debt, and therefore, provides no schedules related to debt.

Sources: Unless otherwise noted, the information in these schedules is derived from the audited annual financial statements for the relevant year.

Miami Valley Risk Management Association  
Net Position by Component  
Last Ten Years

Schedule 1

	Year Ended December 31									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Invested in capital assets	\$ 17,192	\$ 11,747	\$ 8,756	\$ 6,395	\$ 2,839	\$ 3,890	\$ 5,051	\$ 1,544	\$ 5,058	\$ 8,978
Unrestricted	\$ 11,216,080	\$ 11,275,275	\$ 10,575,137	\$ 11,187,936	\$ 10,274,966	\$ 8,382,738	\$ 10,325,620	\$ 9,250,682	\$ 7,598,631	\$ 9,269,697
Total Net Position	\$ 11,233,272	\$ 11,287,022	\$ 10,583,893	\$ 11,194,331	\$ 10,277,805	\$ 8,386,628	\$ 10,330,671	\$ 9,252,226	\$ 7,603,689	\$ 9,278,675

Note: Accounting standards require that net position be reported in three components in the financial statements: invested in capital assets net of related debt, restricted and unrestricted. The Association does not have any assets "restricted" by outside parties or by law through constitutional provisions or enabling legislation. The "unrestricted" assets are assets that do not meet the definition of "restricted" or "invested in capital assets net of related debt."

Source: Audited Financial Statements for the years 2013-2022

Miami Valley Risk Management Association  
Changes in Net Position  
Last Ten Years

Schedule 2

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
EXPENSES:										
Claim expenses										
Incurred claims and claim adjustment expenses	\$1,010,964	\$1,892,603	\$651,209	\$1,890,342	\$1,984,627	\$1,298,832	\$1,011,172	\$1,431,084	\$2,467,648	\$827,856
Reinsurance/insurance premiums	870,249	878,317	885,468	864,407	947,406	988,162	1,125,633	1,473,388	1,808,446	2,362,508
Total claim expense	1,881,213	2,770,920	1,536,677	2,754,749	2,932,033	2,286,994	2,136,805	2,904,472	4,276,094	3,190,364
Total general and administrative expenses	751,099	757,719	758,871	826,140	835,464	881,436	987,998	854,427	885,455	631,270
Total operating expenses	2,632,312	3,528,639	2,295,548	3,580,889	3,767,497	3,168,430	3,124,803	3,758,899	5,161,549	3,821,634
REVENUES:										
Operating revenues										
Members' contributions	4,139,860	4,173,334	4,208,593	4,211,279	4,039,646	4,124,647	4,215,860	4,807,293	4,991,737	6,057,009
Claim deductibles	195,194	251,166	214,597	188,899	229,033	205,147	197,056	188,172	270,126	252,400
Other	24,862	37,437	39,109	93,488	35,770	48,670	111,011	19,323	154,854	57,944
Total operating revenues	4,359,916	4,461,937	4,462,299	4,493,666	4,304,449	4,378,464	4,523,927	5,014,788	5,416,717	6,367,353
Non-operating revenues (expense)										
Gain/Loss on disposal of capital assets	(265)	-	166	(304)	-	-	176	-	-	-
Interest income	55,996	119,888	151,016	201,828	245,259	245,073	265,620	228,822	191,594	203,178
Realized gain/loss on sale of investment	-	-	-	-	-	-	-	50,100	25,757	-
Unrealized gain/loss on investment	(98,847)	326,367	(389,946)	(452,151)	(62,438)	(71,551)	377,426	246,165	(396,414)	(1,062,899)
Members' dividends	(3,254,320)	(1,325,803)	(2,389,527)	(51,712)	(1,636,299)	(3,035,305)	(98,303)	(2,859,421)	(1,724,642)	(11,012)
Total non-operating revenues	(3,297,436)	(879,548)	(2,628,291)	(302,339)	(1,453,478)	(2,861,783)	544,919	(2,334,334)	(1,903,705)	(870,733)
Total revenues										
CHANGES IN NET POSITION:										
Increase (decrease) in net position	(1,569,832)	53,750	(461,540)	610,438	(916,526)	(1,651,749)	1,944,043	(1,078,445)	(1,648,537)	1,674,986

Source: Audited Financial Statements for the years 2013-2022

**Miami Valley Risk Management Association**  
**Loss Development Report-Comparison of Dollar Losses and Claims Counts by Loss Year - As of December 31, 2022**  
**Last 10 Years**

Schedule 3

Loss Experience After:	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months		
Loss Year/Members' Loss Fund Contribution	Total amount incurred followed by number of claims/open claims (1)										Balance in Loss Fund 12/31/22	Paid to Date 12/31/22
<b>Loss Year 25</b> <b>12/31/12-12/31/13</b> <b>20 Member Cities</b>	\$764,655 (363/25)	\$952,440 (371/9)	\$1,180,592 (374/6)	\$1,421,688 (374/5)	\$1,435,920 (375/3)	\$1,428,162 (375/0)	\$1,428,162 (375/0)	\$1,428,162 (375/0)	\$1,428,162 (375/0)	\$1,428,162 (375/0)	\$0 (LY Closed)	\$1,428,162
<b>Loss Year 26</b> <b>12/31/13-12/31/14</b> <b>20 Member Cities</b>	\$1,480,995 (395/46)	\$1,626,822 (421/8)	\$2,228,715 (422/3)	\$2,217,389 (422/2)	\$2,237,389 (422/2)	\$2,207,066 (422/0)	\$2,025,685 (422/0)	\$2,025,685 (422/0)	\$2,025,685 (422/0)		\$0 (LY Closed)	\$2,025,685
<b>Loss Year 27</b> 12/31/14- <b>12/31/15</b> <b>20 Member Cities</b>	\$626,239 (344/53)	\$947,321 (364/7)	\$1,018,542 (369/3)	\$1,049,615 (369/1)	\$1,059,615 (369/1)	\$1,056,165 (369/0)	\$1,056,165 (369/0)	\$1,056,165 (369/0)			\$0 (LY Closed)	\$1,056,165
<b>Loss Year 28</b> 12/31/15- <b>12/31/16</b> <b>20 Member Cities</b>	\$577,160 (349/56)	\$998,670 (386/11)	\$1,090,294 (389/8)	\$1,143,625 (390/5)	\$1,297,611 (390/3)	\$1,346,175 (390/3)	\$1,294,423 (390/1)				\$1,767,913	\$1,261,794
<b>Loss Year 29</b> 12/31/16- <b>12/31/17</b> <b>20 Member Cities</b>	\$643,802 (352/74)	\$1,115,953 (374/10)	\$1,234,883 (376/4)	\$1,200,098 (377/2)	\$1,214,608 (377/0)	\$1,214,608 (377/0)					\$0 (LY Closed)	\$1,214,608
<b>Loss Year 30</b> 12/31/17- <b>12/31/18</b> <b>20 Member Cities</b>	\$960,849 (370/78)	\$938,593 (413/9)	\$1,149,365 (415/6)	\$1,524,356 (415/4)	\$1,380,781 (416/1)						\$1,392,564	\$1,318,332
<b>Loss Year 31</b> 12/31/18- <b>12/31/19</b> <b>20 Member Cities</b>	\$768,547 (279/46)	\$1,025,943 (304/10)	\$1,336,955 (310/13)	\$1,456,056 (310/7)							\$1,046,828	\$1,308,067
<b>Loss Year 32</b> 12/31/19- <b>12/31/20</b> <b>21 Member Cities</b>	\$345,736 (235/56)	\$1,453,639 (259/32)	\$1,782,472 (261/2)								\$1,317,402	\$1,767,012
<b>Loss Year 32</b> 12/31/20- <b>12/31/21</b> <b>21 Member Cities</b>	\$1,395,759 (260/93)	\$1,308,088 (276/18)									\$1,242,533	\$1,217,623
<b>Loss Year 33</b> 12/31/21- <b>12/31/22</b> <b>21 Member Cities</b>	\$1,296,798 (284/98)										\$1,976,332	\$684,783

(1) Incurred losses include both paid claims (including loss adjustment expenses) and all claims reserves against open claims.

Year Ended December 31

Member	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Beavercreek	\$243,516	\$272,287	\$252,044	\$404,225	\$396,331	\$376,481	\$386,335	\$290,474	\$275,125	\$302,222
Bellbrook	\$74,118	\$77,140	\$69,985	\$58,945	\$43,586	\$41,654	\$41,772	\$42,823	\$40,886	\$52,434
Blue Ash	\$256,961	\$274,384	\$242,578	\$270,782	\$305,552	\$272,335	\$273,513	\$270,323	\$324,875	\$347,097
Centerville	\$198,140	\$182,291	\$183,871	\$194,763	\$165,657	\$163,297	\$172,091	\$180,592	\$193,841	\$251,886
Englewood	\$157,223	\$142,257	\$143,500	\$122,470	\$110,777	\$121,263	\$121,449	\$119,708	\$125,852	\$172,025
Fairfield	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$447,380	\$472,932	\$535,517
Indian Hill	\$114,673	\$135,918	\$124,962	\$102,159	\$96,127	\$92,846	\$97,660	\$116,852	\$110,656	\$138,459
Kettering	\$527,445	\$569,468	\$504,942	\$510,029	\$483,326	\$482,101	\$531,091	\$554,768	\$615,648	\$760,938
Madeira	\$51,720	\$37,293	\$37,718	\$35,798	\$43,778	\$53,754	\$65,887	\$78,629	\$50,743	\$61,466
Mason	\$358,149	\$346,946	\$304,519	\$252,994	\$258,915	\$297,685	\$314,490	\$377,074	\$377,781	\$449,905
Miamisburg	\$232,959	\$214,458	\$227,484	\$248,201	\$218,238	\$234,983	\$267,148	\$255,813	\$284,008	\$327,803
Montgomery	\$131,749	\$114,304	\$120,712	\$104,255	\$104,963	\$110,282	\$106,442	\$102,692	\$114,897	\$129,560
NAWA <sup>1</sup>	\$7,939	\$12,481	\$11,835	\$11,018	\$7,807	\$7,630	\$7,999	\$7,919	\$20,756	\$25,394
Piqua	\$308,575	\$370,336	\$342,528	\$312,389	\$286,932	\$326,311	\$309,951	\$380,083	\$329,733	\$449,790
Sidney	\$297,323	\$275,604	\$291,276	\$267,186	\$248,446	\$268,006	\$261,609	\$288,514	\$285,384	\$327,697
Springdale	\$150,283	\$142,950	\$157,690	\$155,822	\$147,329	\$144,919	\$140,075	\$137,851	\$136,838	\$195,616
Tipp City	\$132,256	\$148,587	\$194,349	\$263,477	\$188,514	\$203,316	\$234,869	\$201,495	\$209,290	\$202,443
Troy	\$271,031	\$272,050	\$276,511	\$304,759	\$288,345	\$282,197	\$313,352	\$300,246	\$315,609	\$458,069
Vandalia	\$213,809	\$208,679	\$186,839	\$165,571	\$181,551	\$163,633	\$184,439	\$193,224	\$179,944	\$219,180
West Carrollton	\$104,785	\$104,806	\$149,097	\$152,266	\$114,605	\$121,320	\$106,134	\$108,407	\$109,333	\$127,913
Wilmington	\$230,042	\$237,165	\$257,999	\$199,029	\$204,166	\$180,841	\$187,724	\$253,712	\$323,806	\$403,105
Wyoming	\$137,163	\$123,930	\$93,154	\$99,813	\$119,701	\$134,793	\$81,830	\$98,714	\$93,490	\$118,490
Total	\$4,199,859	\$4,263,334	\$4,173,593	\$4,235,951	\$4,014,646	\$4,079,647	\$4,205,860	\$4,807,293	\$4,991,427	\$6,057,009

*Note 1: Beginning in 2007, NAWA, a joint venture water authority shared by Tipp City and Vandalia, was included as a separate entity for the purpose of calculating member contributions.*

*Source: Association's internal records*

**Miami Valley Risk Management Association**  
**Demographic Statistics**  
**Last 10 Years**

Schedule 5

MVRMA is a consortium of municipalities located in southwest Ohio. Core cities for the region are Dayton and Cincinnati. Information for the Dayton MSA and the Cincinnati MSA provides an indication of the demographic and economic condition of the region.

<b>DAYTON MSA</b>	<b><u>2022</u></b>	<b><u>2021</u></b>
<b>Population:</b>	*	813,516
<b>Total Personal Income (thousands \$):</b>	*	45,208,430
<b>Per Capita Personal Income:</b>	*	55,572
<b>GDP (thousands \$):</b>	*	40,549,210
<b>Wage and Salary Jobs:</b>	*	387,772
<b>Unemployment Rate:</b>	3.50%	3.50%

\* This information is not yet available

**Ten Largest Employers (employee count and %):**

	<u>Count</u>	<u>%</u>		<u>Count</u>	<u>%</u>
Wright-Patterson Air Force Base	32,000		Wright-Patterson Air Force Base	32,000	8.25%
Kettering Health Network	13,720		Kettering Health Network	13,984	3.61%
Premier Health	11,344		Premier Health	10,537	2.72%
Kroger Co	4,523		Kroger Co.	4,523	1.17%
Montgomery County	4,352		Montgomery County	4,272	1.10%
Dayton Children's Hospital	3,904		Miami University	3,723	0.96%
Miami University	3,794		Dayton Children's Hospital	3,620	0.93%
Meijer, Inc.	3,496		Meijer Inc.	3,496	0.90%
University of Dayton	3,100		CareSource	3,100	0.80%
Caresource	3,000		Honda Development & Manufacturing	3,000	0.77%

<b>CINCINNATI MSA</b>	<b><u>2022</u></b>	<b><u>2021</u></b>
<b>Population:</b>	*	2,259,935
<b>Total Personal Income (thousands \$):</b>	*	142,639,155
<b>Per Capita Personal Income:</b>	*	63,116
<b>GDP (thousands \$)</b>	*	171,737,526
<b>Wage and Salary Jobs:</b>	*	1,118,354
<b>Unemployment Rate:</b>	3.1%	3%

\* This information is not yet available

**Ten Largest Employers (employee count and %):**

	<u>Count</u>	<u>%</u>		<u>Count</u>	<u>%</u>
Kroger co.	18,000		Kroger	18,000	1.61%
Cincinnati Children's Hospital	16,478		Cincinnati Children's Hospital	16,478	1.47%
Cinn/Northern Kentucky Airport	14,602		Cinn/Northern Kentucky Airport	14,000	1.25%
TriHealth Inc	12,000		St. Elizabeth Healthcare	10,282	0.92%
St. Elizabeth Healthcare	10,282		University of Cincinnati	10,196	0.91%
University of Cincinnati	19,196		TriHealth	12,000	1.07%
UC Health	10,112		UC Health	12,000	1.07%
The Proctor and Gamble Company	10,000		The Proctor and Gamble Company	10,000	0.89%
GE Transportation	9,000		GE Transportation	9,700	0.87%
Bon Secours Mercy Health	7,700		Fifth Third	7,500	0.67%

**Miami Valley Risk Management Association  
Demographic Statistics  
Last 10 Years**

Schedule 5

	<u>2020</u>	<u>2019</u>
<b>DAYTON MSA</b>		
<b>Population:</b>	809,248	807,611
<b>Total Personal Income (thousands \$):</b>	\$42,377,993	39,703,066
<b>Per Capita Personal Income:</b>	\$52,367	49,161
<b>GDP (thousands \$):</b>	\$45,157,246	45,689,081
<b>Wage and Salary Jobs:</b>	382,864	404,157
<b>Unemployment Rate:</b>	5.00%	3.60%

**Ten Largest Employers (employee count and %):**

	<b>Count</b>	<b>%</b>		<b>Count</b>	<b>%</b>
Wright Patterson Air Force	30,000	7.84%	Wright Patterson Air Force	30,000	7.48%
Kettering Health Network	12,847	3.36%	Premier Health	12,425	3.10%
Premier Health	12,018	3.14%	Kettering Health Network	9,319	2.32%
Kroger Co.	4,532	1.18%	Montgomery County	4,284	1.07%
Montgomery County	4,239	1.11%	Kroger Co.	4,030	1.00%
Miami University	3,781	0.99%	Miami University	3,817	0.95%
Meijer	3,607	0.94%	Dayton's Children's Hospital	3,341	0.83%
Dayton Children's Hospital	3,342	0.87%	Honda of America	3,200	0.80%
Caresource	3,148	0.82%	Sinclair Community College	3,163	0.79%
Sinclair Community College	3,017	0.79%	CareSource	3,021	0.75%

	<u>2020</u>	<u>2019</u>
<b>CINCINNATI MSA</b>		
<b>Population:</b>	2,232,907	2,221,208
<b>Total Personal Income (thousands \$):</b>	\$133,097,872	124,461,934
<b>Per Capita Personal Income:</b>	\$59,607	56,033
<b>GDP (thousands \$):</b>	\$152,618,516	153,931,926
<b>Wage and Salary Jobs:</b>	1,084,005	1,146,149
<b>Unemployment Rate:</b>	4.70%	3.20%

**Ten Largest Employers (employee count and %):**

	<b>Count</b>	<b>%</b>		<b>Count</b>	<b>%</b>
Cincinnati Children's Hospital	15,796	1.46%	Kroger	20,000	1.74%
Cinn/Northern Kentucky Airport	14,602	1.35%	Universityof Cincinnati	15,000	1.31%
Kroger	14,987	1.38%	Cincinnati Children's Hospital	12,000	1.05%
University of Cincinnati	10,159	0.94%	The Proctor & Gamble Company	12,000	1.05%
The Proctor & Gamble Company	10,000	0.92%	TriHealth, Inc.	10,000	0.87%
TriHealth, Inc.	12,332	1.14%	UC Health	8,000	0.70%
UC Health	11,000	1.01%	GE Transportation	7,500	0.65%
GE Transportation	9,700	0.89%	St. Elizabeth Healthcare	7,000	0.61%
St. Elizabeth Healthcare	8,885	0.82%	Fifth Third Bank	7,000	0.61%
Fifth Third Bank	7,366	0.68%			

**Miami Valley Risk Management Association**

Schedule 5

**Demographic Statistics**

**Last 10 Years**

**DAYTON MSA**

	<b>2018</b>	<b>2017</b>
<b>Population:</b>	806,548	803,416
<b>Total Personal Income (thousands \$):</b>	\$38,461,497	\$36,722,900
<b>Per Capita Personal Income:</b>	\$47,687	\$45,708
<b>GDP (thousands \$):</b>	\$43,254,892	\$41,703,905
<b>Wage and Salary Jobs:</b>	401,009	398,960
<b>Unemployment Rate:</b>	4.60%	4.20%

**Ten Largest Employers (employee count and %):**

	<b>Count</b>	<b>%</b>		<b>Count</b>	<b>%</b>
Wright Patterson Air Force	28,000	6.98%	Wright Patterson Air Force Base	27,585	6.91%
Premier Health	12,138	3.03%	Premier Health Partners	13,858	3.47%
Kettering Health Network	8,909	2.22%	Kettering Health Network	8,415	2.11%
Kroger Co.	4,855	1.21%	Kroger Co.	5,151	1.29%
Montgomery County	4,366	1.09%	Montgomery County	4,383	1.10%
Miami University	3,777	0.94%	Miami University	3,778	0.95%
Sinclair Community College	3,085	0.77%	Honda of America Manufacturing	3,300	0.83%
University of Dayton	3,028	0.76%	Sinclair Community College	3,094	0.78%
Honda of America	3,000	0.75%	LexisNexis	3,000	0.75%
LexisNexis	3,000	0.75%	University of Dayton	2,964	0.74%

**CINCINNATI MSA**

	<b>2018</b>	<b>2017</b>
<b>Population:</b>	2,212,945	2,179,082
<b>Total Personal Income (thousands \$):</b>	\$119,887,654	\$112,301,900
<b>Per Capita Personal Income:</b>	\$54,176	\$51,536
<b>GDP (thousands \$):</b>	\$141,052,695	\$139,031,021
<b>Wage and Salary Jobs:</b>	1,133,931	1,111,262
<b>Unemployment Rate:</b>	4.00%	3.8%

**Ten Largest Employers (employee count and %):**

	<b>Count</b>	<b>%</b>		<b>Count</b>	<b>%</b>
Kroger	21,263	1.88%	Kroger	20,000	1.80%
Cincinnati Children's Hospital	15,429	1.36%	University of Cincinnati	15,000	1.35%
Cincinnati/Northern KY Airport	12,682	1.12%	Cincinnati Children's Hospital	12,000	1.08%
TriHealth	12,000	1.06%	Proctor & Gamble	12,000	1.08%
UC Health	11,241	0.99%	TriHealth Inc.	10,000	0.90%
University of Cincinnati	10,551	0.93%	UC Health	8,000	0.72%
GE Transportation	10,500	0.93%	GE Transportation	7,500	0.67%
Mercy Health	10,422	0.92%	St. Elizabeth Healthcare	7,000	0.63%
Proctor and Gamble	10,000	0.88%	Fifth Third Bank	7,000	0.63%



**Miami Valley Risk Management Association  
Demographic Statistics  
Last 10 Years**

Schedule 5

<b>DAYTON MSA</b>	<b><u>2016</u></b>	<b><u>2015</u></b>
<b>Population:</b>	800,683	800,909
<b>Total Personal Income (thousands \$):</b>	\$34,966,720	\$34,204,726
<b>Per Capita Personal Income:</b>	\$43,671	\$42,707
<b>GDP (thousands \$):</b>	\$40,309,278	\$39,144,944
<b>Wage and Salary Jobs:</b>	400,572	389,565
<b>Unemployment Rate:</b>	4.5%	4.5%

**Ten Largest Employers (employee count and %):**

	<b>Count</b>	<b>%</b>		<b>Count</b>	<b>%</b>
Wright Patterson Air Force Base	27,585	6.89%	Wright Patterson Air Force Base	26,270	6.74%
Premier Health Partners	13,500	3.37%	Premier Health Partners	13,500	3.47%
Kettering Health Network	8,288	2.07%	Kettering Health Network	8,259	2.12%
Montgomery County	4,389	1.10%	Montgomery County	4,343	1.11%
Kroger Co.	4,267	1.07%	Kroger Co.	4,335	1.11%
Wright State University	3,715	0.93%	Miami University	3,655	0.94%
Miami University	3,685	0.92%	LexisNexis	3,000	0.77%
Sinclair Community College	3,206	0.80%	Honda of America	2,800	0.72%
LexisNexis	3,000	0.75%	Wright State University	2,469	0.63%
Honda of America	2,850	0.71%	University of Dayton	2,453	0.63%

<b>CINCINNATI MSA</b>	<b><u>2016</u></b>	<b><u>2015</u></b>
<b>Population:</b>	2,165,139	2,157,719
<b>Total Personal Income (thousands \$):</b>	\$105,372,017	\$101,960,460
<b>Per Capita Personal Income:</b>	\$48,668	\$47,254
<b>GDP (thousands \$):</b>	\$134,287,267	\$127,779,662
<b>Wage and Salary Jobs:</b>	1,096,885	1,077,899
<b>Unemployment Rate:</b>	3.8%	4.3%

**Ten Largest Employers (employee count and %):**

	<b>Count</b>	<b>%</b>		<b>Count</b>	<b>%</b>
Kroger Co.	20,000	1.82%	Kroger Co.	21,646	2.01%
University of Cincinnati	15,000	1.37%	University of Cincinnati	16,016	1.49%
Cincinnati Children's Hospital	12,000	1.09%	Cincinnati Children's Hospital	14,944	1.39%
Proctor & Gamble	12,000	1.09%	TriHealth Inc	11,800	1.09%
TriHealth Inc.	10,000	0.91%	Proctor & Gamble	11,000	1.02%
UC Health	8,000	0.73%	UC Health	10,000	0.93%
GE Transportation	7,500	0.68%	GE Aviation	7,800	0.72%
St. Elizabeth Healthcare	7,000	0.64%	Mercy Health - Cincinnati	7,500	0.70%
Fifth Third Bank	7,000	0.64%	St. Elizabeth Healthcare	7,479	0.69%
			Fifth Third Bancorp	6,882	0.64%

**Miami Valley Risk Management Association  
Demographic Statistics  
Last 10 Years**

Schedule 5

	<u><b>2014</b></u>	<u><b>2013</b></u>
<b>Population:</b>	800,836	802,489
<b>Total Personal Income (thousands \$):</b>	33,143,730	\$32,382,822
<b>Per Capita Personal Income:</b>	41,386	\$40,353
<b>GDP (thousands \$):</b>	38,178,000	\$37,534,000
<b>Wage and Salary Jobs:</b>	383,380	378,185
<b>Unemployment Rate:</b>	5.8%	7.8%

**Ten Largest Employers (employee count and %):**

	<b>Count</b>	<b>%</b>		<b>Count</b>	<b>%</b>
Wright Patterson Air Force Base	27,500	7.17%	Wright Patterson Air Force Base	29,000	7.67%
Premier Health Partners	13,500	3.52%	Premier Health Partners	14,765	3.90%
Kettering Health Network	7,115	1.86%	Kettering Health Network	7,000	1.85%
Kroger Company	5,582	1.46%	Kroger Company	4,950	1.31%
Montgomery County	4,328	1.13%	Montgomery County	3,884	1.03%
Miami University	3,564	0.93%	LexisNexis	3,600	0.95%
Wright State University	3,303	0.86%	Miami University	3,313	0.88%
LexisNexis	3,200	0.83%	Sinclair College	2,613	0.69%
Sinclair Community College	2,601	0.68%	Honda of America	2,500	0.66%
Honda of America	2,600	0.68%	Wright State University	2,403	0.64%

	<u><b>2014</b></u>	<u><b>2013</b></u>
<b>Population:</b>	2,149,449	2,150,524
<b>Total Personal Income (thousands \$):</b>	\$98,613,244	\$93,882,332
<b>Per Capita Personal Income:</b>	\$45,878	\$43,923
<b>GDP (thousands \$):</b>	121,407,000	\$119,090,000
<b>Wage and Salary Jobs:</b>	\$1,507,998	\$1,040,070
<b>Unemployment Rate:</b>	5.4%	7.2%

**Ten Largest Employers (employee count and %):**

	<b>Count</b>	<b>%</b>		<b>Count</b>	<b>%</b>
Kroger Company	17,000	1.13%	Kroger Company	17,000	1.63%
University of Cincinnati	15,162	1.01%	University of Cincinnati	15,162	1.46%
Procter & Gamble Co.	14,000	0.93%	Procter & Gamble Co.	14,000	1.35%
Cincinnati Children's Hospital	12,057	0.80%	Cincinnati Children's Hospital	12,057	1.16%
TriHealth Inc.	8,898	0.59%	TriHealth Inc.	8,898	0.86%
Mercy Health Partners	8,550	0.57%	Mercy Health Partners	8,550	0.82%
Archdiocese of Cincinnati	8,000	0.53%	Archdiocese of Cincinnati	8,000	0.77%
GE Aviation	7,300	0.48%	GE Aviation	7,300	0.70%
Wal-Mart Stores	6,932	0.46%	Wal-Mart Stores	6,932	0.67%
St. Elizabeth Healthcare	6,839	0.45%	St. Elizabeth Healthcare	6,839	0.66%

Sources: US Census Bureau, Bureau of Economic Analysis, Ohio Dept. of Jobs and Family Services, The Dayton Business Journal, REDI Cincinnati, and The City of Blue Ash Economic Development

## MVRMA POOL CONTRIBUTION FACTORS -- 2022 / Loss Year 34

Schedule 6

Member City	2020 Population	# Sworn FT Police	# Other Full-Time	# Titled Vehicles	Insurable Property Values	NOE	Avg. Annual Adjusted Losses	Pool Contribution Factors
Beavercreek	47,995	50	100	148	\$44,537,133	\$27,383,221	\$26,413	5.03746%
Bellbrook	7,383	12	21	33	\$15,925,415	\$5,605,524	\$448	0.87634%
Blue Ash	12,492	34	103	111	\$128,264,108	\$35,486,941	\$65,117	5.78241%
Centerville	23,700	40	99	97	\$44,428,340	\$23,820,101	\$34,544	4.21064%
Englewood	13,502	22	74	60	\$53,459,485	\$14,971,864	\$24,336	2.87790%
Fairfield	42,603	61	206	195	\$114,709,867	\$61,403,012	\$60,260	8.13852%
Indian Hill	5,769	21	60	63	\$31,192,427	\$17,482,082	\$19,150	2.31314%
Kettering	54,773	81	318	234	\$194,662,733	\$78,900,656	\$124,711	12.70986%
Madeira	9,284	14	11	21	\$5,893,027	\$5,529,035	\$7,207	1.02633%
Mason	34,300	44	161	184	\$167,089,530	\$49,652,469	\$60,432	7.50998%
Miamisburg	20,117	35	103	104	\$102,524,114	\$27,222,464	\$60,263	5.46879%
Montgomery	10,888	22	50	56	\$30,173,316	\$20,363,268	\$11,839	2.16058%
NAWA	-	0	5	2	\$16,234,233	\$1,853,587	\$6,162	0.39910%
Piqua	21,435	34	153	155	\$195,833,972	\$54,113,478	\$72,148	7.52451%
Sidney	20,301	36	162	163	\$98,329,965	\$30,849,890	\$42,433	5.46654%
Springdale	11,201	35	85	71	\$45,181,659	\$22,805,421	\$25,833	3.27472%
Tipp City	10,166	20	51	73	\$44,257,664	\$29,654,495	\$36,845	3.36575%
Troy	26,473	43	151	148	\$115,480,095	\$34,245,515	\$94,420	7.66996%
Vandalia	14,987	35	102	96	\$65,785,774	\$23,975,572	\$23,623	3.66004%
West Carrollton	12,850	22	54	64	\$33,938,286	\$12,970,833	\$11,070	2.13452%
Wilmington	12,399	20	125	142	\$90,304,603	\$22,136,394	\$95,146	6.41298%
Wyoming	8,550	17	32	40	\$39,446,852	\$11,626,496	\$18,089	1.97994%
<b>TOTALS</b>	<b>421,168</b>	<b>698</b>	<b>2,226</b>	<b>2,260</b>	<b>\$1,677,652,598</b>	<b>\$612,052,318</b>	<b>\$920,489</b>	<b>100.00000%</b>

**Notes:**

1. The data is as of 8/15/21 unless otherwise noted.

2. "Avg. Annual Adjusted Losses" are calculated by averaging each member's losses for the years 2017, 2018, 2019 & 2020.

Losses are adjusted in accordance with MVRMA's Loss Capping Policy and include both paid claims and open claim reserves.

Loss data is as of August 2, 2021

appraised. Annually, Alliant updates the values of existing buildings using an index.

has been adjusted to exclude depreciation, interest expense and contracts for which the risk has been effectively transferred to a third

above table:

$$(3 \times \%AAAL) + (\%Population + \%FT Police + \% Other FT + \%Titled Vehicles + \% IRPRV + \%NOE)$$

Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Employees	Full-Time Sworn Police	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$763,825	370,590	1,825	611	1,976	\$1,077,777,731	\$420,844,315	100.00%
2014	\$672,451	370,590	1,822	605	1,924	\$1,107,428,574	\$411,669,530	100.00%
2015	\$724,499	370,590	1,825	622	1,904	\$1,113,247,357	\$420,164,274	100.00%
2016	\$821,474	370,590	1,927	629	2,025	\$1,387,612,758	\$511,970,781	100.00%
2017	\$835,455	370,590	1,849	634	1,987	\$1,235,194,030	\$444,428,163	100.00%
2018	\$899,008	370,590	1,938	645	2,010	\$1,318,462,345	\$477,164,152	100.00%
2019	\$884,061	370,590	1,927	629	2,025	\$1,387,612,758	\$511,970,781	100.00%
2020	\$823,913	370,590	2,015	622	2,051	\$1,444,416,825	\$544,820,528	100.00%
2021	\$925,830	413,203	2,255	712	2,317	\$1,627,778,372	\$449,979,104	100.00%
2022	\$920,489	421,168	2,226	698	2,260	\$167,652,598	\$612,052,318	100.00%

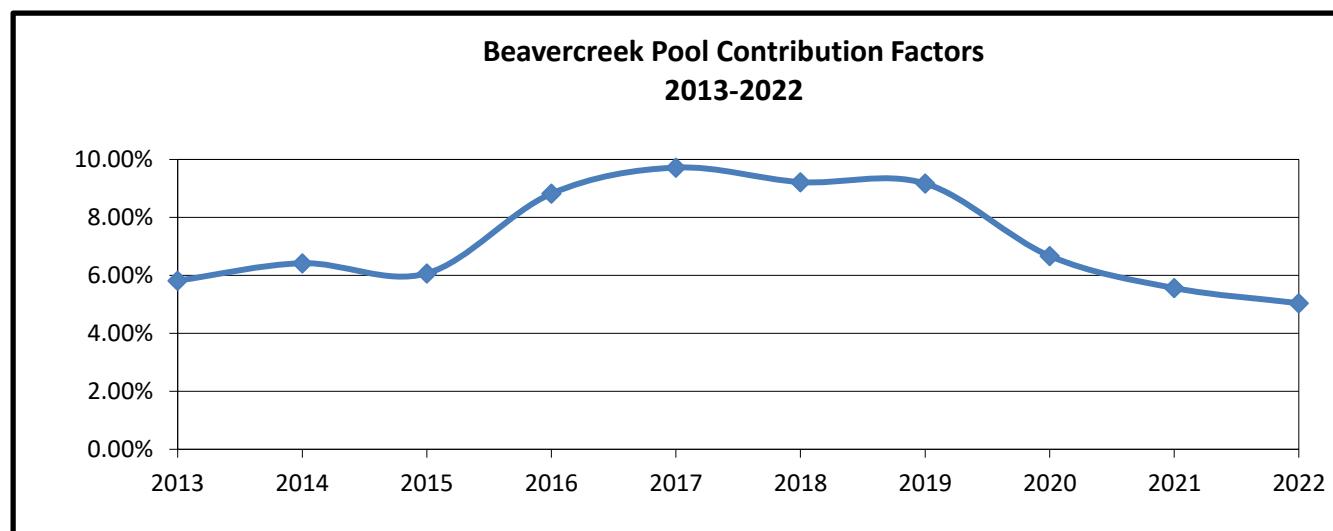
Note: In 2007, NAWA, a joint venture water authority shared by the cities of Tipp City and Vandalia, was included as a separate entity when co factors were calculated for each member of the pool. Calculating a separate contribution factor for NAWA was simply a means of separating it: from the cities of Tipp City and Vandalia. The totals above include the following information submitted for NAWA:

NAWA - 2013	\$0	0	4	0	1	\$13,512,950	\$922,993	0.19%
NAWA - 2014	\$2,166	0	4	0	1	\$13,010,810	\$976,491	0.29%
NAWA - 2015	\$2,166	0	4	0	1	\$13,010,810	\$952,964	0.28%
NAWA - 2016	\$2,166	0	4	0	1	\$14,740,428	\$287,066	0.26%
NAWA - 2017	\$0	0	4	0	2	\$14,832,952	\$1,096,999	0.20%
NAWA - 2018	\$0	0	4	0	2	\$14,845,395	\$1,243,673	0.19%
NAWA - 2019	\$0	0	4	0	2	\$15,229,675	\$1,269,145	0.18%
NAWA - 2020	\$0	0	4	0	2	\$15,851,114	\$1,323,172	0.18%
NAWA - 2021	\$6,162	0	4	0	2	\$16,012,021	\$1,337,640	0.39%
NAWA - 2022	\$6,162	0	5	0	2	\$16,234,233	\$1,853,587	0.39%

Source: Association's internal records

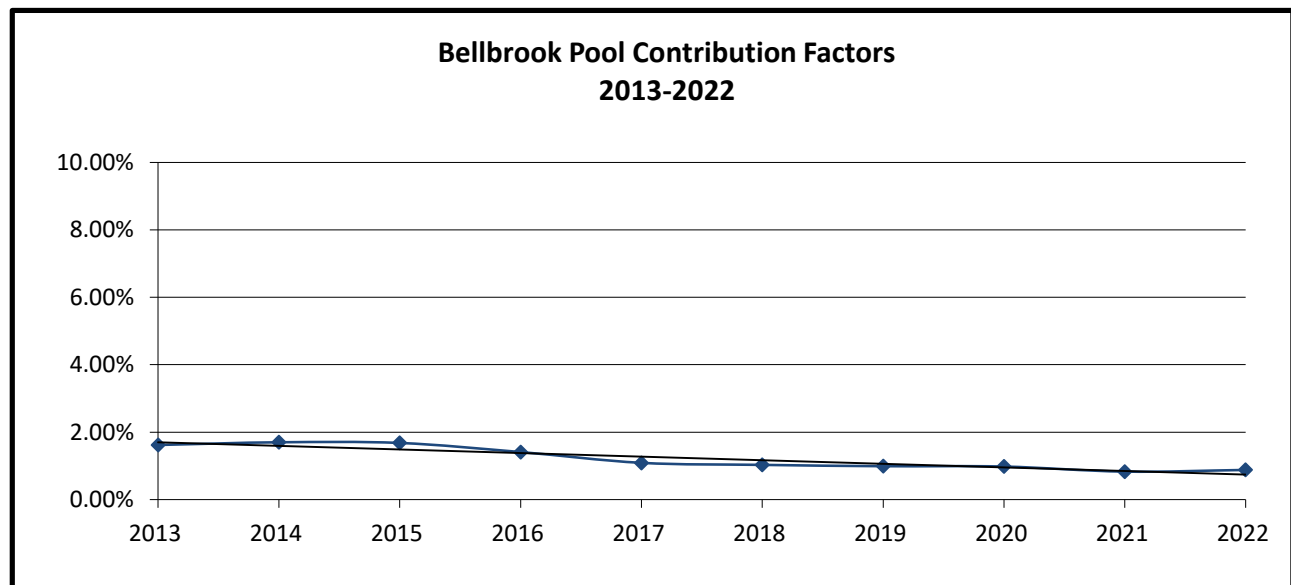
Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$40,172	45,193	47	86	97	\$28,996,673	\$18,579,197	5.82%
2014	\$45,937	45,193	46	86	99	\$29,362,096	\$20,582,065	6.42%
2015	\$42,018	45,193	47	85	108	\$29,769,414	\$18,828,507	6.07%
2016	\$114,445	45,193	49	84	107	\$39,267,907	\$17,233,509	8.82%
2017	\$139,604	45,193	48	86	115	\$34,916,451	\$19,362,614	9.72%
2018	\$135,665	45,193	48	95	120	\$37,187,098	\$21,017,345	9.22%
2019	\$133,278	45,193	49	95	126	\$39,267,907	\$17,233,509	9.17%
2020	\$57,543	45,193	50	95	135	\$41,247,037	\$25,512,604	6.67%
2021	\$39,895	45,193	68	81	148	\$43,358,980	\$18,083,165	5.56%
2022	\$26,413	47,995	50	100	148	\$44,537,133	\$27,383,221	5.04%

Source: Association's internal records



Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$13,621	6,943	12	25	32	\$14,013,239	\$4,731,637	1.62%
2014	\$14,085	6,943	12	21	31	\$14,346,736	\$4,562,205	1.70%
2015	\$14,727	6,943	12	22	30	\$14,271,119	\$5,003,578	1.68%
2016	\$10,768	6,943	12	21	29	\$14,381,106	\$4,850,570	1.41%
2017	\$3,219	6,943	12	21	30	\$14,617,343	\$4,850,506	1.09%
2018	\$1,260	6,943	12	21	30	\$14,939,089	\$5,262,563	1.03%
2019	\$1,260	6,943	12	21	30	\$14,939,089	\$5,262,563	0.99%
2020	\$848	6,943	12	21	32	\$15,693,252	\$5,710,319	0.98%
2021	\$448	6,943	12	21	33	\$15,645,922	\$2,763,959	0.83%
2022	\$448	7,383	12	21	33	\$15,925,415	\$5,605,524	0.88%

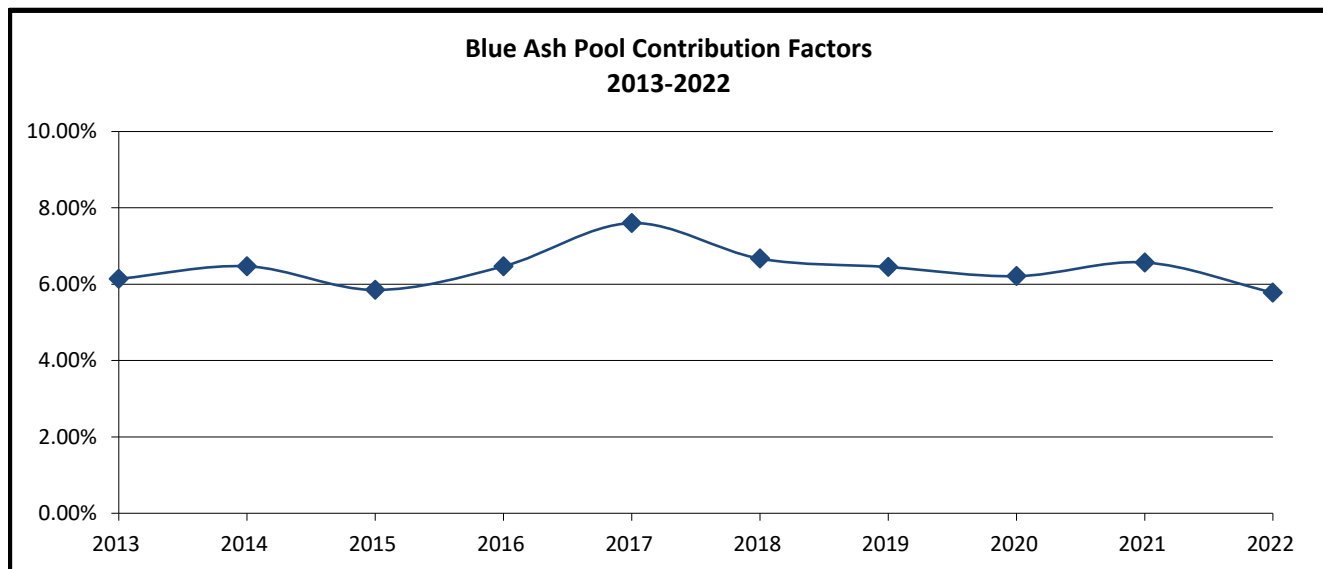
Source: Association's internal records



Last Ten Years

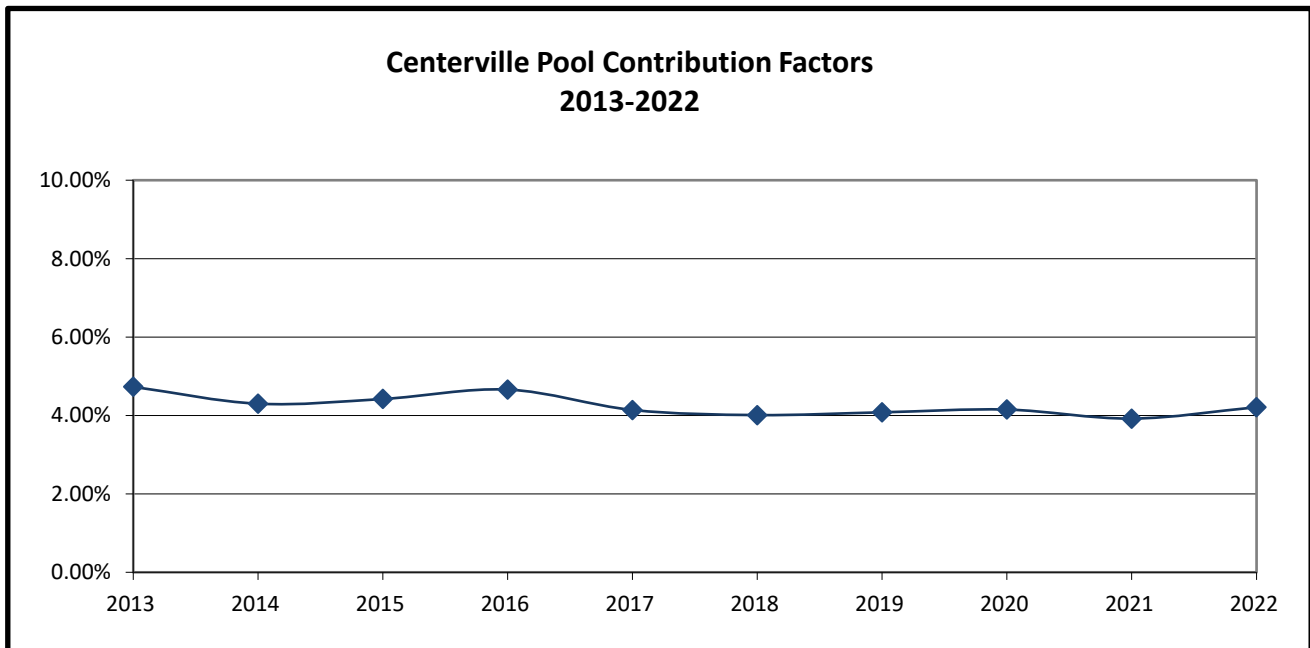
Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$47,171	12,114	35	97	109	\$90,720,934	\$35,631,783	6.14%
2014	\$50,436	12,114	32	93	111	\$94,664,444	\$31,999,635	6.47%
2015	\$41,104	12,114	32	100	109	\$96,040,638	\$30,980,532	5.85%
2016	\$63,400	12,114	32	100	109	\$96,760,953	\$31,950,901	6.47%
2017	\$90,330	12,114	34	107	109	\$109,611,799	\$31,908,666	7.60%
2018	\$75,207	12,114	34	108	113	\$105,131,960	\$34,591,458	6.67%
2019	\$65,514	12,114	34	107	119	\$118,393,102	\$36,981,816	6.45%
2020	\$57,416	12,114	34	103	110	\$125,278,264	\$38,501,787	6.21%
2021	\$87,544	12,114	34	108	113	\$126,361,440	\$25,329,457	6.57%
2022	\$65,117	12,492	34	103	111	\$128,264,108	\$35,486,941	5.78%

Source: Association's internal records



Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$32,731	23,999	40	79	96	\$35,377,779	\$17,939,284	4.73%
2014	\$20,305	23,999	40	80	91	\$35,803,979	\$17,299,367	4.30%
2015	\$26,014	23,999	40	81	83	\$35,644,958	\$17,250,599	4.42%
2016	\$35,777	23,999	40	78	87	\$36,227,816	\$17,754,223	4.66%
2017	\$23,591	23,999	40	78	92	\$36,577,419	\$18,739,020	4.14%
2018	\$23,835	23,999	41	81	94	\$38,265,500	\$20,506,479	4.01%
2019	\$23,835	23,999	41	81	94	\$38,265,500	\$20,506,479	4.08%
2020	\$20,368	23,999	29	123	114	\$43,771,876	\$22,165,005	4.15%
2021	\$26,075	23,999	34	89	130	\$44,493,221	\$17,813,739	3.92%
2022	\$34,544	23,700	40	99	97	\$44,428,340	\$23,820,101	4.21%

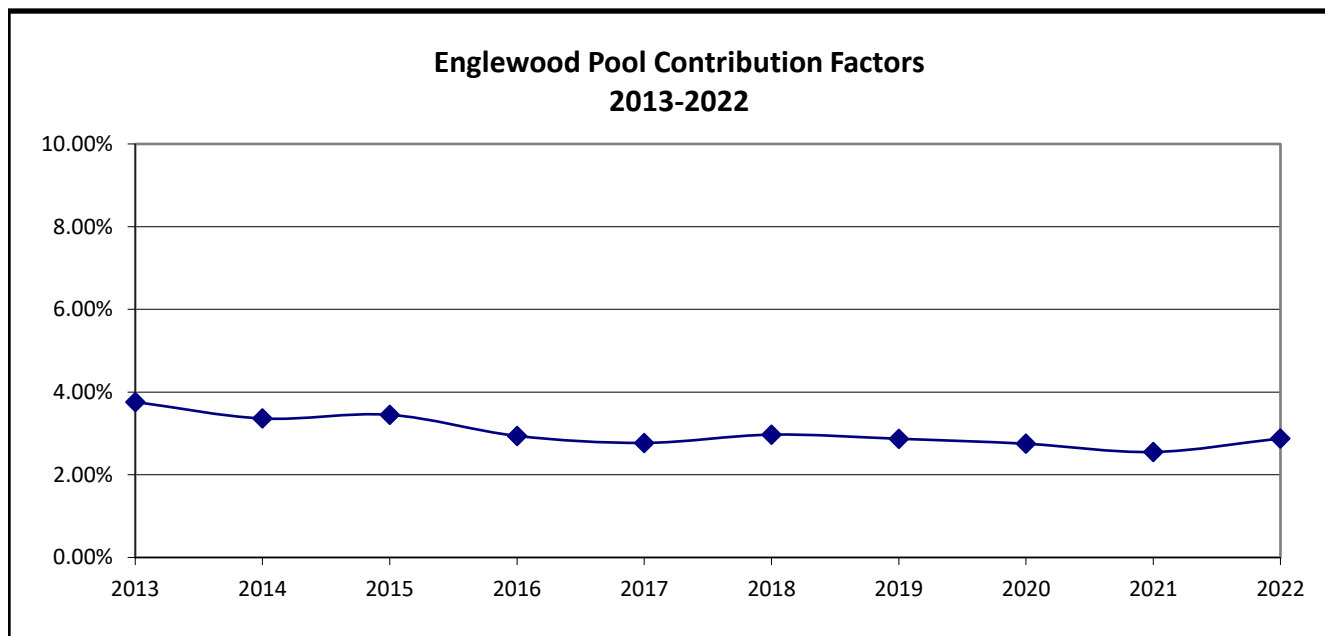
Source: Association's internal records





Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$40,326	13,465	20	45	63	\$31,084,042	\$10,576,634	3.76%
2014	\$26,466	13,465	20	49	63	\$31,999,694	\$10,713,519	3.36%
2015	\$30,371	13,465	20	50	63	\$32,153,474	\$11,290,786	3.45%
2016	\$22,670	13,465	20	49	62	\$32,410,510	\$11,570,295	2.94%
2017	\$19,154	13,465	20	52	62	\$32,146,447	\$11,995,274	2.77%
2018	\$21,799	13,465	20	55	62	\$41,057,826	\$14,106,568	2.97%
2019	\$21,799	13,465	20	55	62	\$41,057,826	\$14,106,568	2.87%
2020	\$16,880	13,465	20	55	61	\$45,420,901	\$15,753,840	2.75%
2021	\$16,744	13,465	21	74	60	\$50,233,936	\$10,425,343	2.55%
2022	\$24,336	13,502	22	74	60	\$53,459,485	\$1,497,184	2.88%

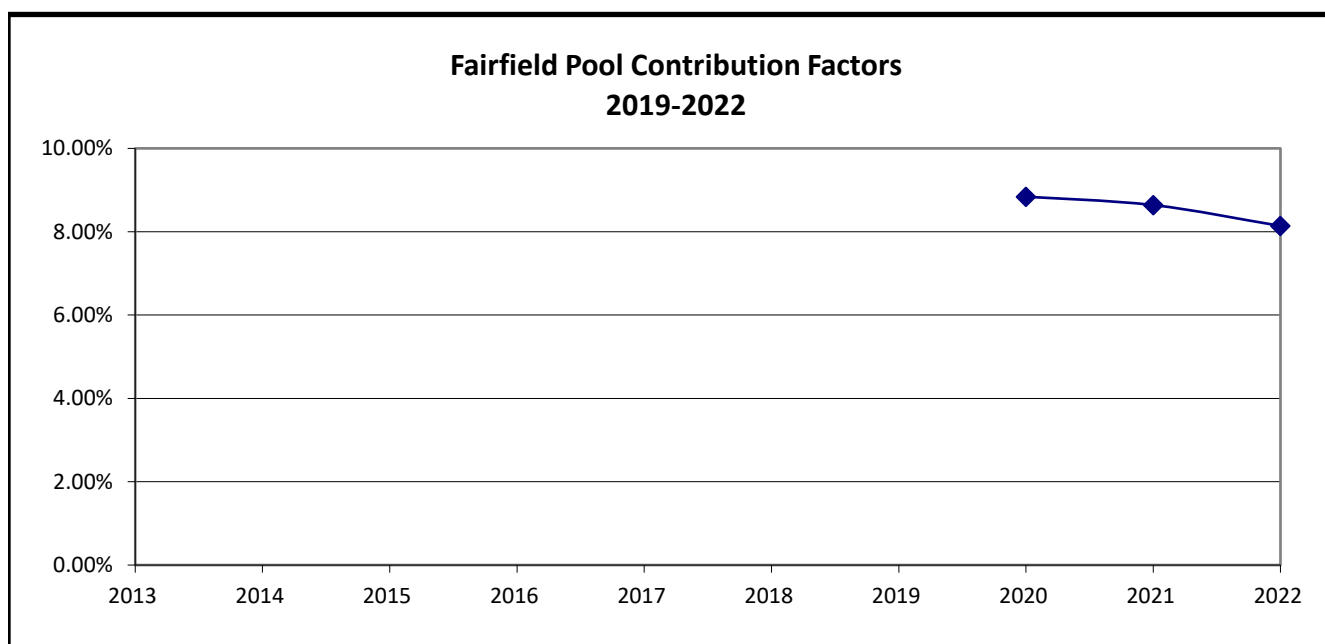
Source: Association's internal records



Last Ten Years

Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2020	\$70,000	42,613	63	202	275	\$92,391,582	\$57,043,248	8.83%
2021	\$70,000	42,613	63	215	211	\$113,086,436	\$46,650,598	8.64%
2022	\$60,260	42,603	61	206	195	\$114,709,867	\$61,403,012	8.14%

Source: Association's internal records

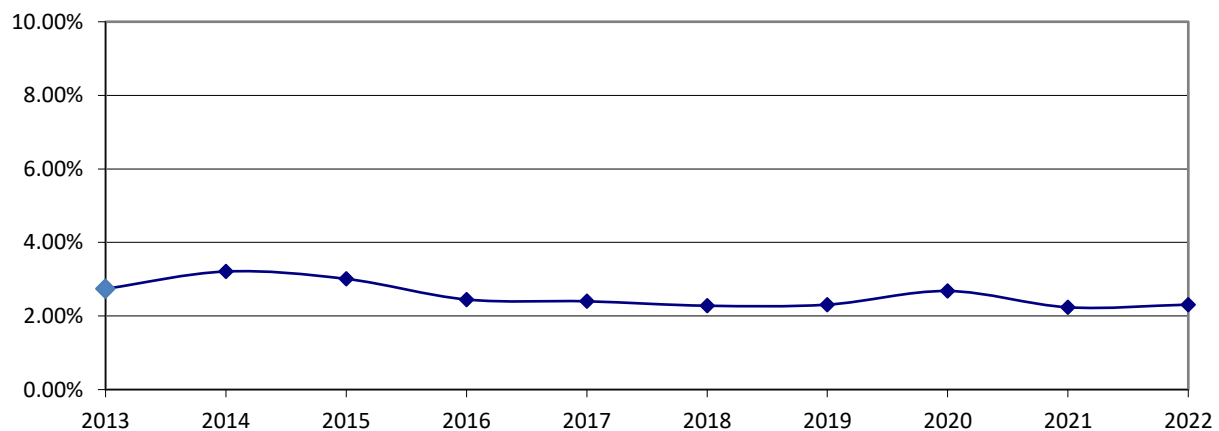


Note: Ten years' of date not available as the City of Fairfield joined MVRMA in December 2019.

Last Ten Years

Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$22,890	5,785	19	53	59	\$25,089,755	\$11,757,158	2.74%
2014	\$28,111	5,785	19	53	64	\$25,936,887	\$12,499,416	3.21%
2015	\$26,341	5,785	19	53	63	\$26,085,169	\$12,659,360	3.01%
2016	\$16,205	5,785	20	54	62	\$26,377,682	\$12,891,852	2.45%
2017	\$15,839	5,785	20	54	61	\$26,721,716	\$13,480,644	2.40%
2018	\$13,894	5,785	20	57	61	\$26,967,014	\$15,599,813	2.28%
2019	\$13,894	5,785	20	56	66	\$29,273,224	\$15,671,784	2.31%
2020	\$22,391	5,785	21	57	66	\$30,472,416	\$15,791,753	2.68%
2021	\$15,722	5,785	21	59	71	\$30,991,521	\$14,006,258	2.24%
2022	\$19,150	5,769	21	60	63	\$31,192,427	\$17,482,082	2.13%

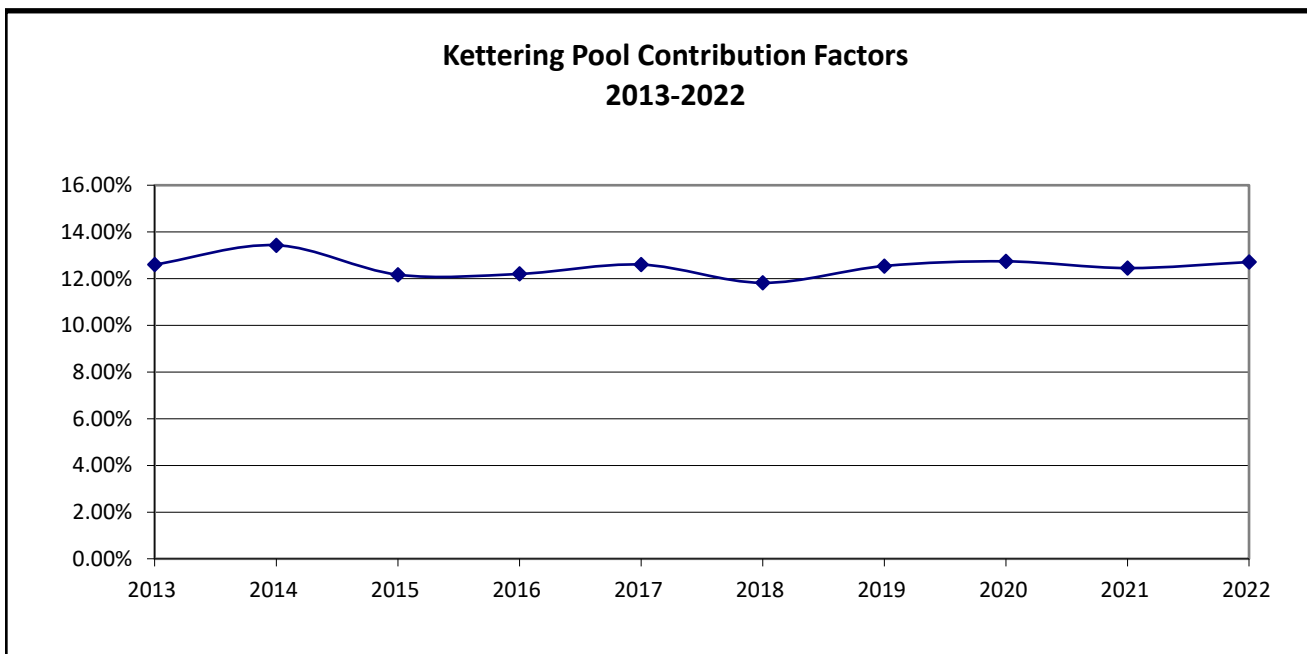
**Indian Hill Pool Contribution Factors  
2013-2022**



Last Ten Years

Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$69,189	56,163	81	280	260	\$168,588,121	\$57,431,798	12.60%
2014	\$74,944	56,163	80	282	260	\$174,741,061	\$58,950,292	13.43%
2015	\$55,970	56,163	80	284	245	\$175,472,336	\$59,574,560	12.17%
2016	\$65,033	56,163	81	290	245	\$179,251,621	\$61,549,195	12.20%
2017	\$63,302	56,163	78	303	249	\$187,790,324	\$63,210,217	12.06%
2018	\$76,630	56,163	80	322	243	\$209,567,322	\$77,636,512	11.82%
2019	\$76,630	56,163	80	322	243	\$209,567,322	\$77,636,512	12.54%
2020	\$83,555	56,163	84	328	248	\$180,496,812	\$79,991,301	12.74%
2021	\$118,849	56,163	81	337	237	\$182,701,883	\$54,811,490	12.45%
2022	\$124,711	54,773	81	318	234	\$194,662,733	\$78,900,656	12.71%

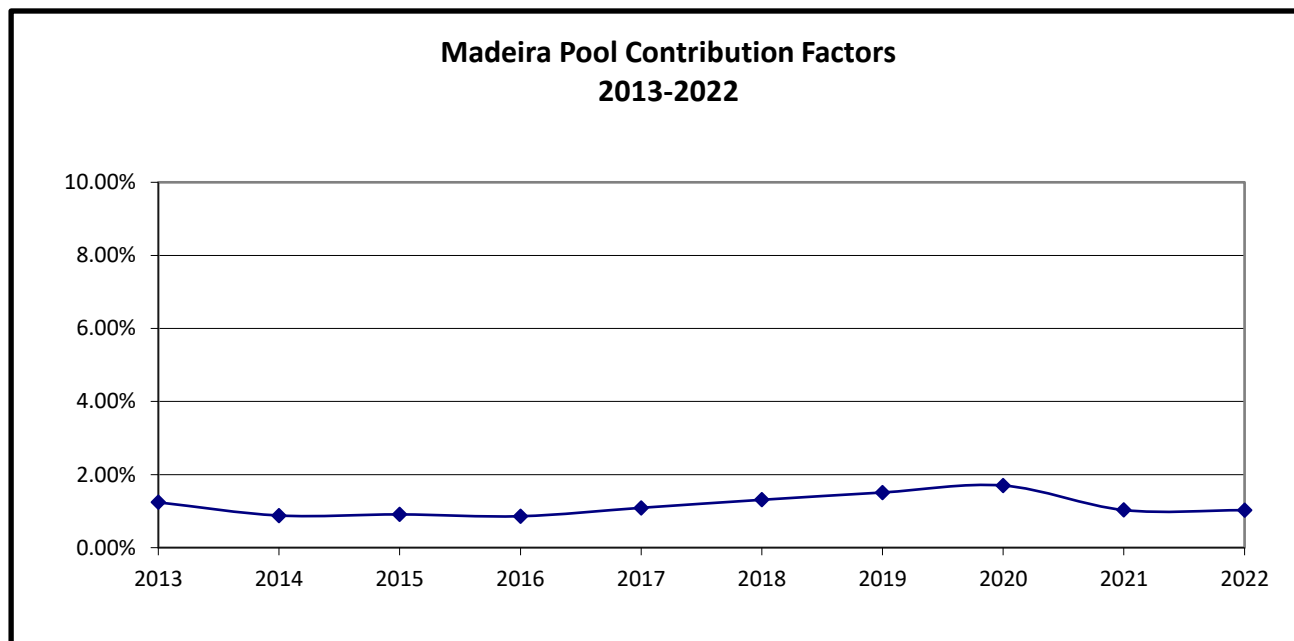
Source: Association's internal records



Last Ten Years

Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$9,953	8,726	12	11	19	\$4,997,826	\$3,647,254	1.24%
2014	\$1,435	8,726	12	11	20	\$5,155,887	\$3,419,147	0.88%
2015	\$2,300	8,726	12	10	20	\$5,155,887	\$3,625,419	0.91%
2016	\$1,548	8,726	12	11	20	\$5,212,559	\$3,390,139	0.86%
2017	\$7,883	8,726	12	10	20	\$5,248,717	\$3,274,069	1.09%
2018	\$18,404	8,726	13	15	17	\$5,412,265	\$4,645,128	1.31%
2019	\$18,404	8,726	15	13	17	\$5,412,265	\$4,645,128	1.51%
2020	\$21,854	8,726	14	11	19	\$5,767,760	\$4,955,224	1.70%
2021	\$8,611	8,726	14	11	19	\$5,754,721	\$3,177,565	1.03%
2022	\$7,207	9,284	14	11	21	\$5,893,027	\$5,529,035	1.03%

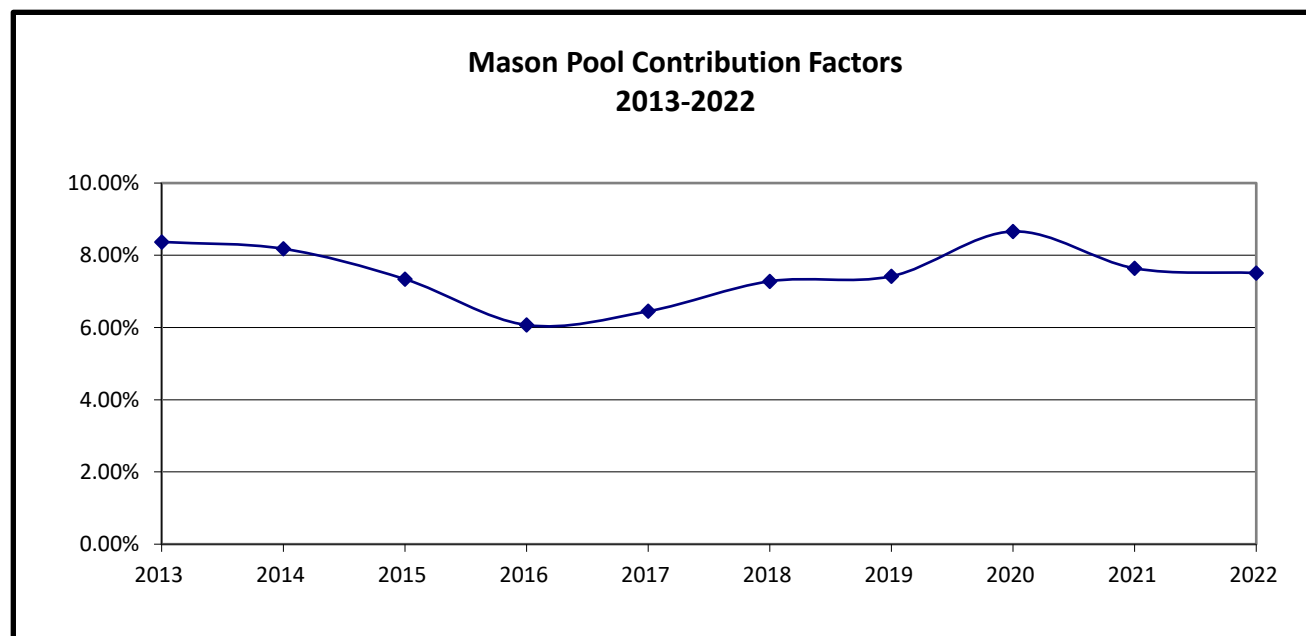
Source: Association's internal records



Last Ten Years

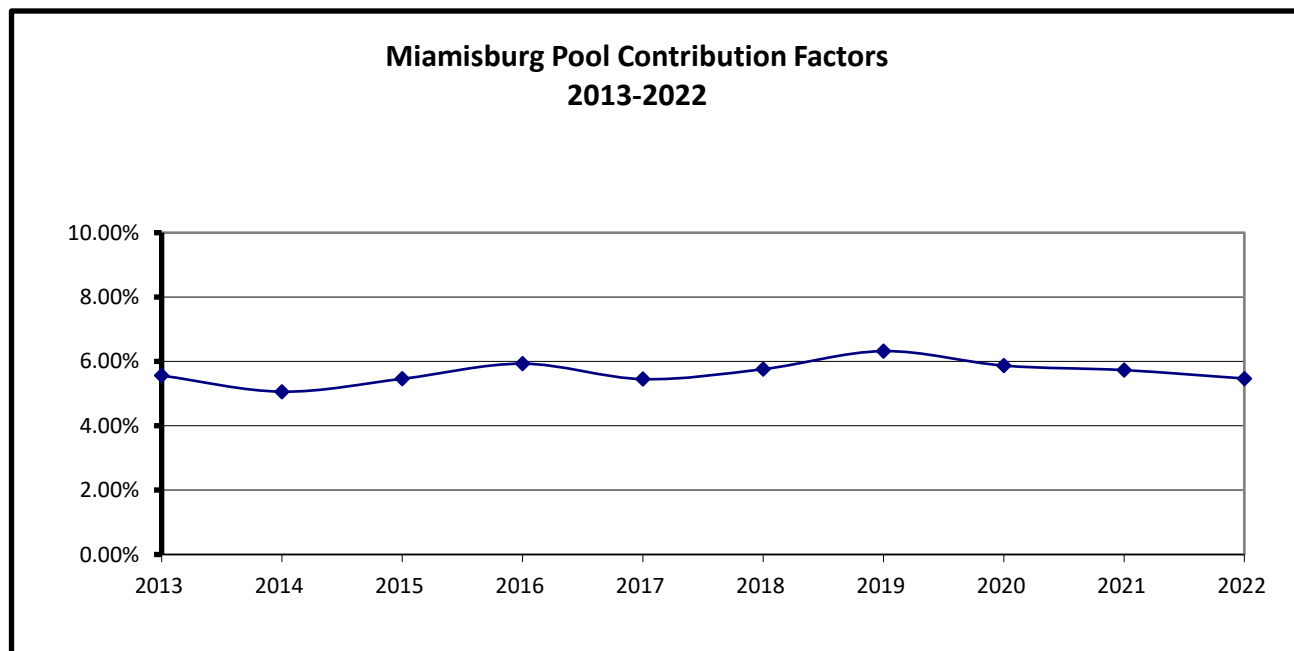
Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$68,019	30,712	40	136	135	\$122,739,440	\$34,084,947	8.37%
2014	\$53,392	30,712	43	144	124	\$128,276,254	\$35,045,902	8.18%
2015	\$38,276	30,712	49	134	123	\$127,892,985	\$36,913,947	7.34%
2016	\$12,809	30,712	42	141	140	\$132,122,628	\$38,044,980	6.07%
2017	\$22,200	30,712	45	143	146	\$139,207,628	\$37,109,923	6.45%
2018	\$46,567	30,712	45	151	164	\$143,727,091	\$47,197,419	7.28%
2019	\$46,567	30,712	45	151	164	\$143,727,091	\$47,197,419	7.42%
2020	\$73,576	30,712	49	155	171	\$152,384,914	\$45,652,169	8.66%
2021	\$71,077	30,712	50	156	179	\$151,009,644	\$33,096,301	7.64%
2022	\$60,432	34,300	44	161	184	\$167,089,530	\$49,652,469	7.51%

Source: Association's internal records



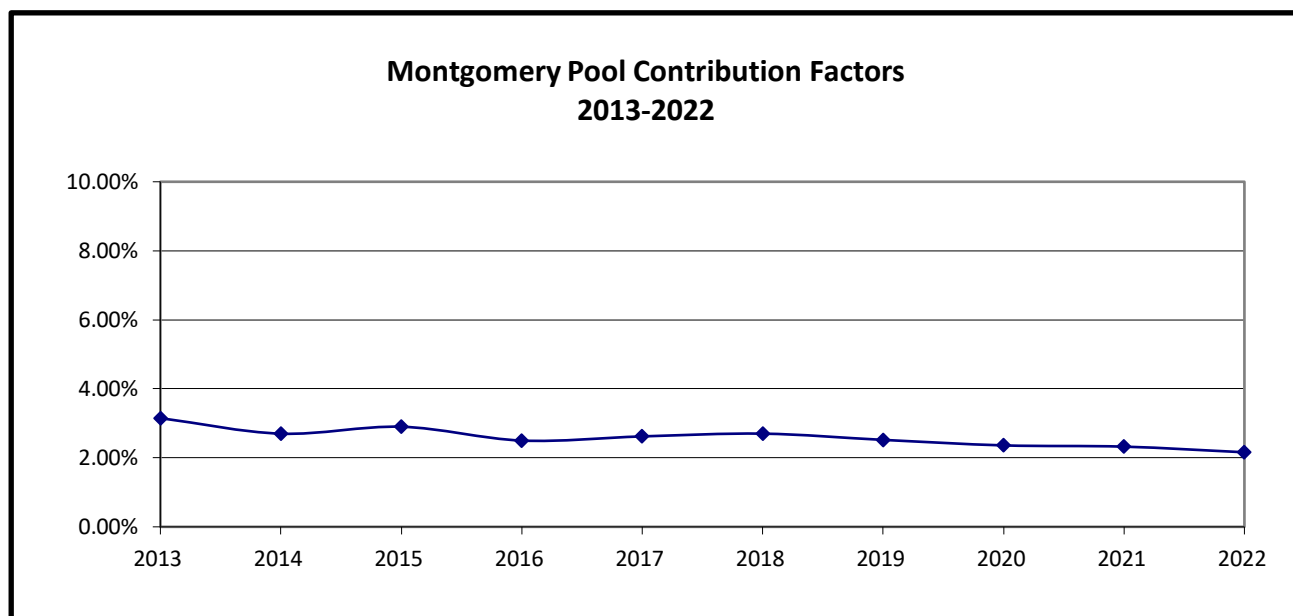
Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$43,839	20,181	35	100	121	\$44,033,325	\$25,122,699	5.56%
2014	\$32,924	20,181	35	90	99	\$41,886,009	\$23,648,250	5.06%
2015	\$44,553	20,181	38	91	103	\$41,870,338	\$21,050,388	5.46%
2016	\$62,190	20,181	35	95	105	\$48,293,033	\$21,180,125	5.93%
2017	\$53,302	20,181	34	95	100	\$48,831,994	\$22,259,700	5.45%
2018	\$74,103	20,181	35	112	107	\$71,138,218	\$23,148,846	5.76%
2019	\$74,103	20,181	35	112	107	\$71,138,218	\$23,148,846	6.32%
2020	\$51,331	20,181	38	109	107	\$100,132,615	\$27,536,118	5.87%
2021	\$64,527	20,181	36	106	105	\$100,777,341	\$24,394,278	5.73%
2022	\$60,263	20,117	35	103	104	\$102,524,114	\$27,222,464	5.47%

Source: Association's internal records



Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$30,102	10,251	21	43	66	\$18,641,658	\$12,087,079	3.15%
2014	\$16,280	10,251	21	43	72	\$18,958,734	\$12,157,433	2.70%
2015	\$21,607	10,251	23	42	72	\$18,628,129	\$12,298,636	2.90%
2016	\$17,922	10,251	22	43	44	\$26,774,775	\$11,925,188	2.50%
2017	\$20,850	10,251	22	43	47	\$26,776,746	\$13,162,092	2.62%
2018	\$20,360	10,251	22	43	51	\$27,647,615	\$14,169,080	2.70%
2019	\$20,360	10,251	22	43	51	\$27,647,615	\$14,169,080	2.52%
2020	\$16,255	10,251	21	42	50	\$29,222,178	\$14,235,016	2.36%
2021	\$17,931	10,251	22	64	54	\$29,531,227	\$11,470,634	2.32%
2022	\$11,839	10,888	22	50	56	\$30,173,316	\$20,363,268	2.16%

Source: Association's internal records

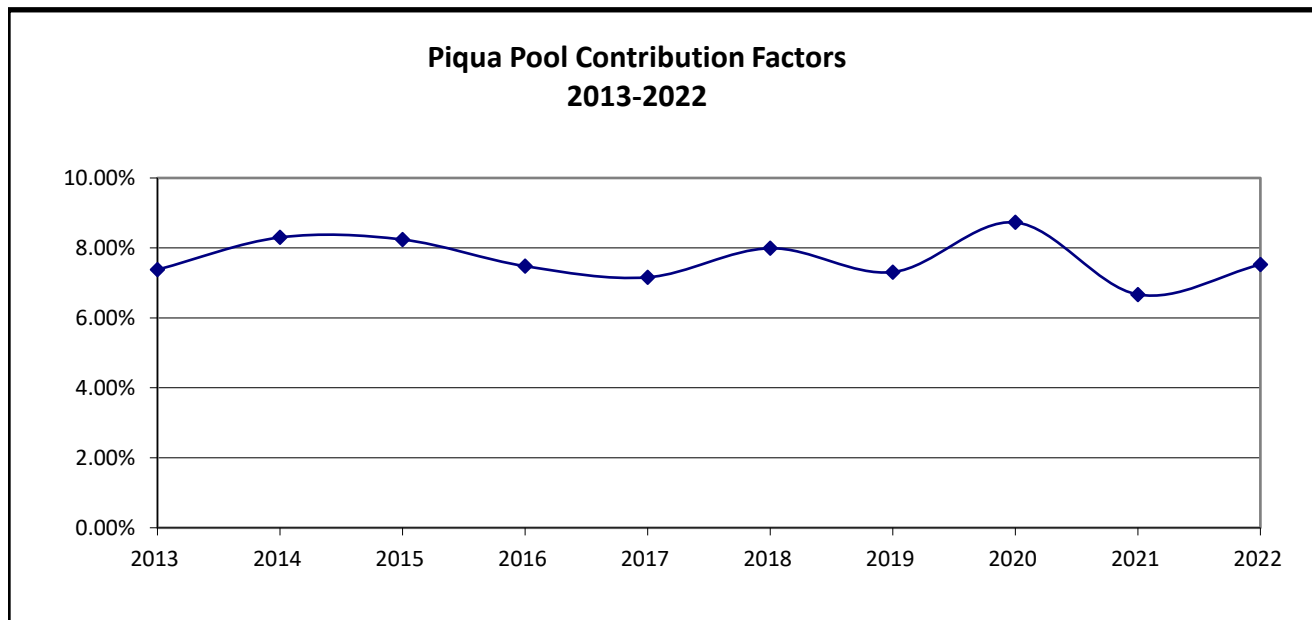




Last Ten Years

Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$59,718	20,522	30	149	152	\$72,017,789	\$41,864,785	7.38%
2014	\$71,322	20,522	30	154	147	\$74,654,276	\$39,353,735	8.30%
2015	\$73,617	20,522	30	158	147	\$75,400,976	\$42,740,087	8.24%
2016	\$54,907	20,522	34	157	162	\$99,149,309	\$47,488,995	7.48%
2017	\$47,244	20,522	31	161	166	\$110,204,542	\$49,325,717	7.16%
2018	\$50,248	20,522	34	161	160	\$144,885,171	\$56,850,108	7.99%
2019	\$50,248	20,522	161	34	160	\$144,885,171	\$56,850,108	7.31%
2020	\$87,435	20,522	32	155	153	\$146,251,801	\$58,512,558	8.73%
2021	\$46,030	20,522	34	155	153	\$192,648,005	\$45,211,920	6.67%
2022	\$72,148	21,435	34	153	155	\$195,833,972	\$54,113,478	7.52%

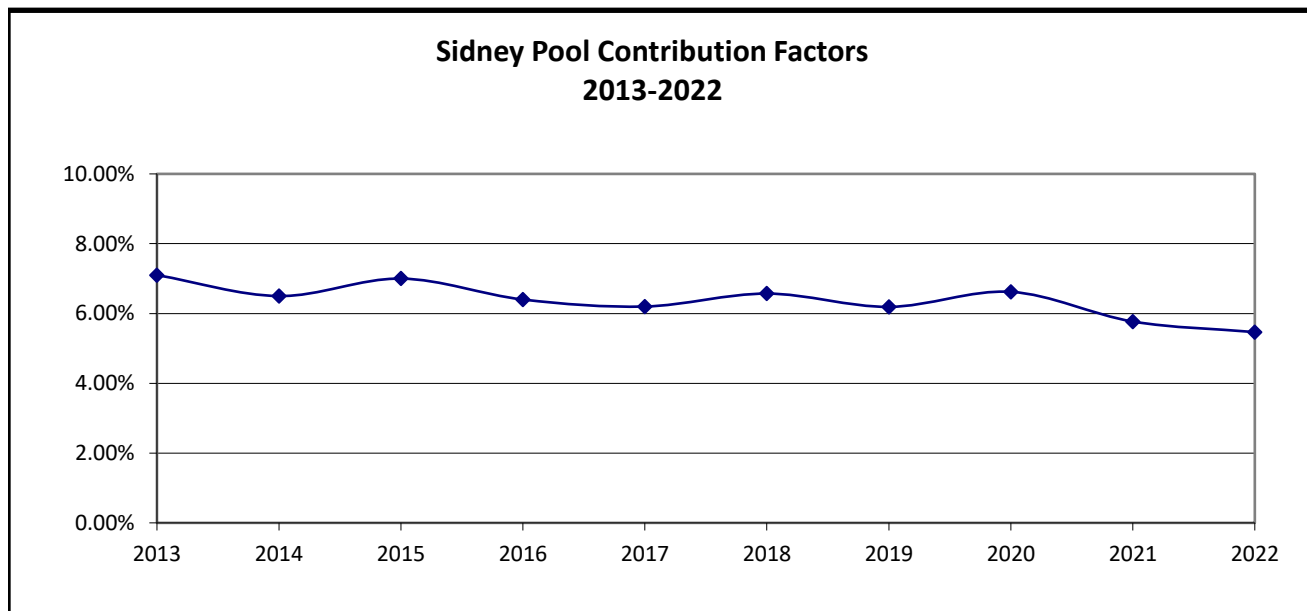
Source: Association's internal records



Last Ten Years

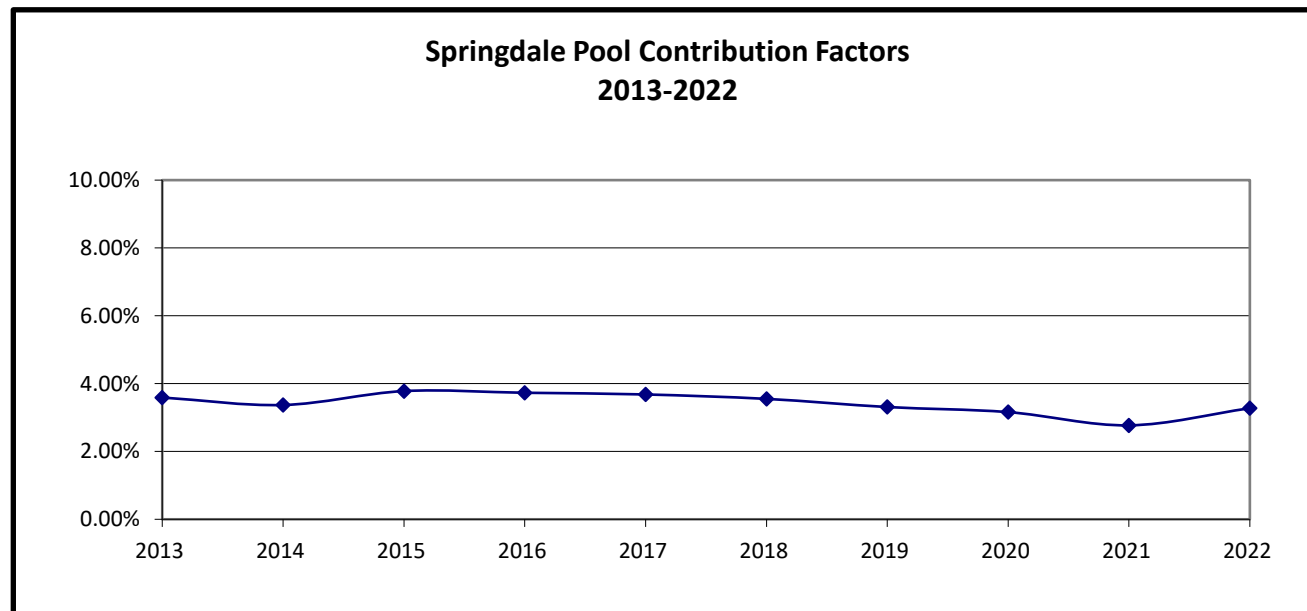
Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$60,577	21,229	36	148	154	\$75,033,010	\$23,703,290	7.10%
2014	\$41,798	21,229	36	149	142	\$76,513,173	\$23,545,356	6.50%
2015	\$56,895	21,229	36	149	133	\$77,683,418	\$24,203,862	7.00%
2016	\$48,047	21,229	36	149	153	\$80,469,787	\$24,562,121	6.40%
2017	\$46,835	21,229	36	154	139	\$81,984,842	\$25,004,148	6.20%
2018	\$50,753	21,229	38	149	147	\$88,091,655	\$27,312,360	6.57%
2019	\$50,753	21,229	38	149	147	\$88,091,655	\$27,312,360	6.19%
2020	\$57,864	21,229	38	149	150	\$94,916,530	\$29,579,976	6.62%
2021	\$53,230	21,229	36	161	161	\$96,951,816	\$20,058,856	5.77%
2022	\$42,433	20,301	36	162	163	\$98,329,965	\$30,849,890	5.47%

Source: Association's internal records



Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$20,889	11,223	36	74	80	\$38,805,997	\$14,575,302	3.59%
2014	\$14,364	11,223	34	76	71	\$39,495,622	\$15,911,155	3.37%
2015	\$24,833	11,223	32	76	73	\$39,769,584	\$16,941,758	3.78%
2016	\$27,036	11,223	33	76	78	\$40,343,050	\$16,215,558	3.73%
2017	\$26,734	11,223	37	76	69	\$40,359,051	\$16,758,666	3.68%
2018	\$20,837	11,223	32	79	69	\$42,083,153	\$20,995,756	3.55%
2019	\$20,837	11,223	32	79	69	\$42,083,153	\$20,995,756	3.31%
2020	\$16,221	11,223	33	83	66	\$43,955,028	\$21,050,311	3.16%
2021	\$15,671	11,223	34	91	74	\$44,445,359	\$10,698,055	2.77%
2022	\$25,833	11,201	35	85	71	\$45,181,659	\$22,805,421	3.27%

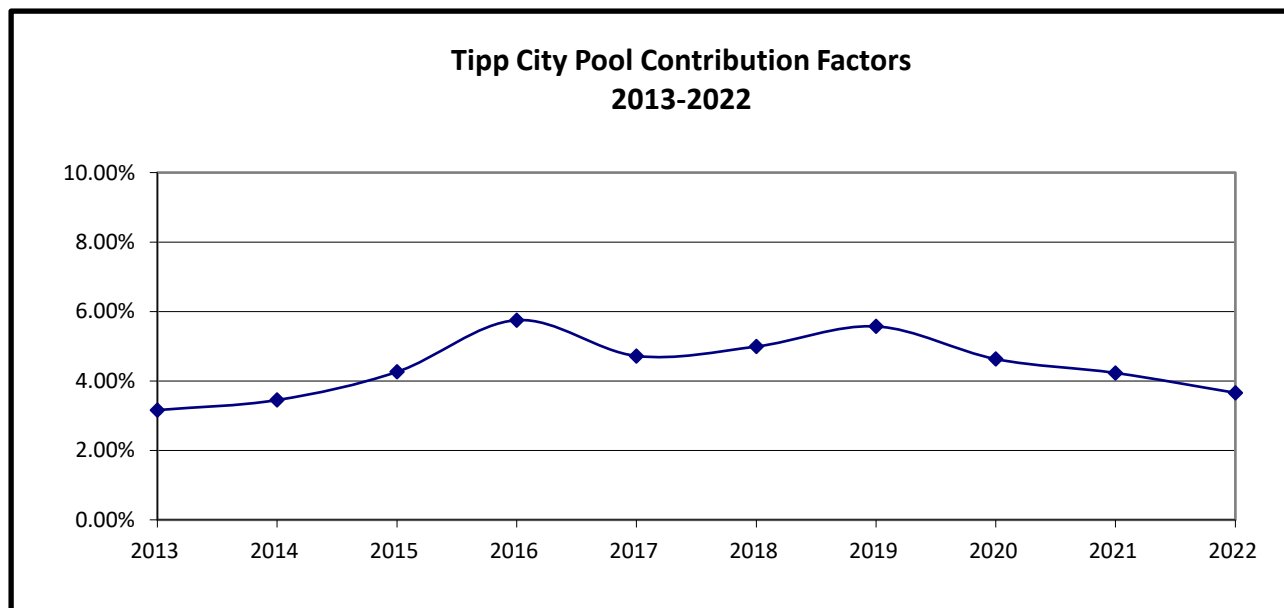
Source: Association's internal records



Last Ten Years

Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$23,571	9,689	18	48	84	\$26,577,876	\$17,862,591	3.16%
2014	\$24,948	9,689	19	47	86	\$30,389,846	\$19,237,669	3.45%
2015	\$43,746	9,689	19	48	80	\$30,983,069	\$20,849,710	4.26%
2016	\$83,711	9,689	19	49	84	\$36,375,267	\$23,526,968	5.75%
2017	\$60,284	9,689	19	49	89	\$37,947,607	\$22,429,536	4.72%
2018	\$88,510	9,689	19	48	79	\$40,172,980	\$26,395,734	4.99%
2019	\$88,510	9,689	48	19	79	\$40,172,980	\$26,395,734	5.57%
2020	\$59,200	9,689	20	51	74	\$41,537,304	\$28,519,971	4.63%
2021	\$58,348	9,689	20	51	76	\$45,585,223	\$25,608,347	4.23%
2022	\$36,845	10,166	20	51	73	\$44,257,664	\$29,654,495	3.37%

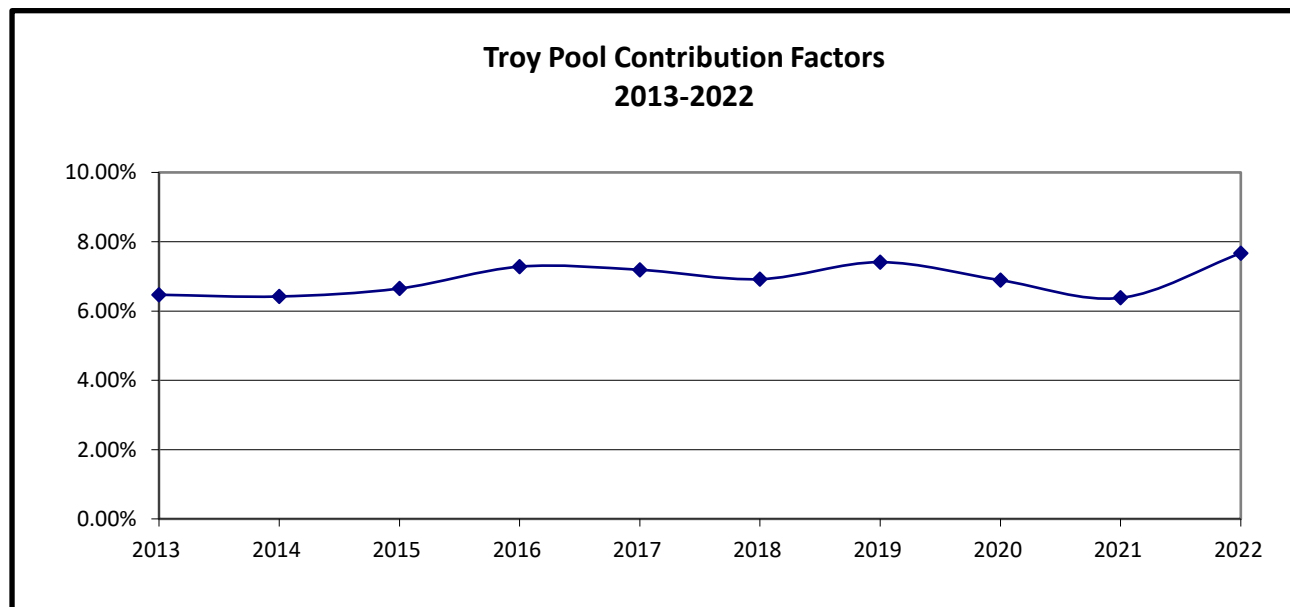
Source: Association's internal records



Last Ten Years

Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$43,715	25,058	39	138	117	\$81,722,588	\$28,978,679	6.47%
2014	\$37,119	25,058	39	140	118	\$82,989,425	\$27,498,899	6.42%
2015	\$42,575	25,058	43	141	124	\$83,607,476	\$28,426,635	6.65%
2016	\$67,444	25,058	43	141	111	\$83,275,967	\$29,243,228	7.28%
2017	\$63,225	25,058	40	141	144	\$88,115,813	\$30,974,471	7.19%
2018	\$72,270	25,058	43	144	146	\$104,911,885	\$32,223,154	6.92%
2019	\$72,270	25,058	144	43	146	\$104,911,885	\$32,223,154	7.41%
2020	\$54,408	25,058	43	151	140	\$110,956,100	\$36,492,082	6.89%
2021	\$60,130	25,058	43	153	149	\$114,842,219	\$25,141,395	6.38%
2022	\$94,420	26,473	43	151	148	\$115,480,095	\$34,245,515	7.67%

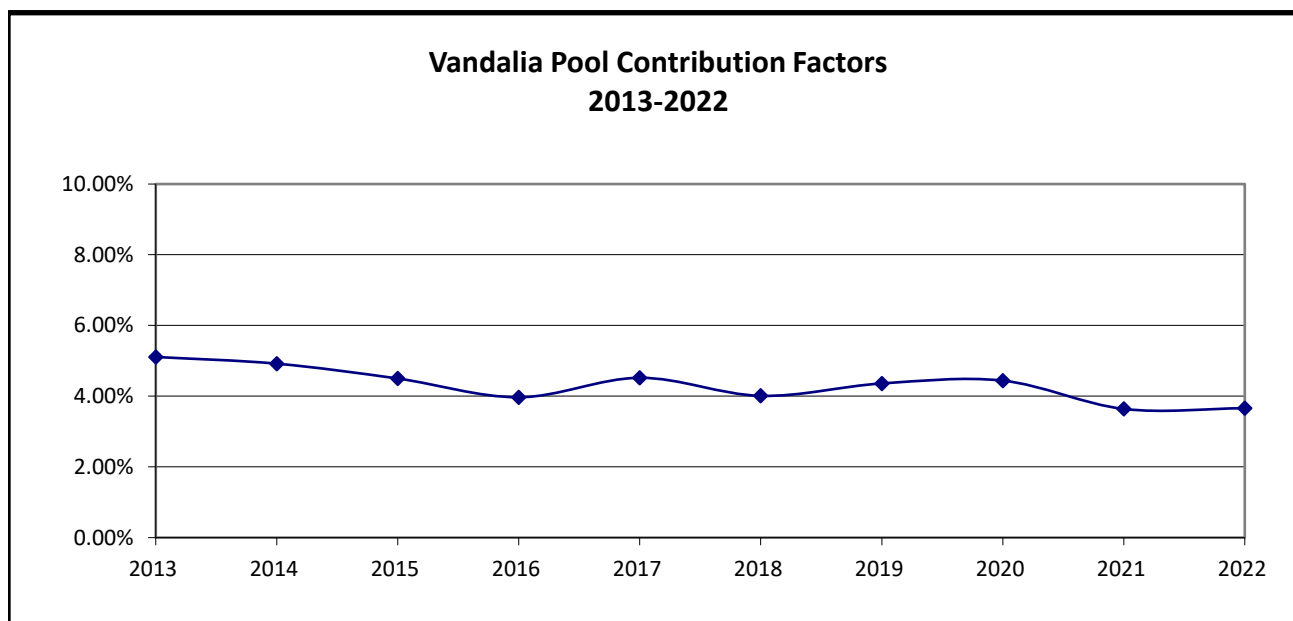
Source: Association's internal records



Last Ten Years

Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Employees	Full-Time Sworn Police	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$40,474	15,246	102	30	104	\$56,289,545	\$20,996,497	5.11%
2014	\$33,126	15,246	105	31	101	\$57,688,226	\$16,739,616	4.92%
2015	\$24,552	15,246	31	107	102	\$57,965,235	\$20,335,739	4.50%
2016	\$15,674	15,246	31	106	104	\$58,382,095	\$20,699,768	3.97%
2017	\$30,156	15,246	31	103	112	\$60,231,706	\$21,085,397	4.52%
2018	\$31,795	15,246	28	98	112	\$63,028,519	\$24,142,716	4.01%
2019	\$31,795	15,246	28	98	112	\$63,028,519	\$24,142,716	4.36%
2020	\$31,771	15,246	26	106	112	\$65,728,761	\$26,105,057	4.44%
2021	\$23,298	15,246	27	108	104	\$66,802,205	\$19,528,185	3.64%
2022	\$23,623	14,987	35	102	96	\$65,785,774	\$23,623	3.66%

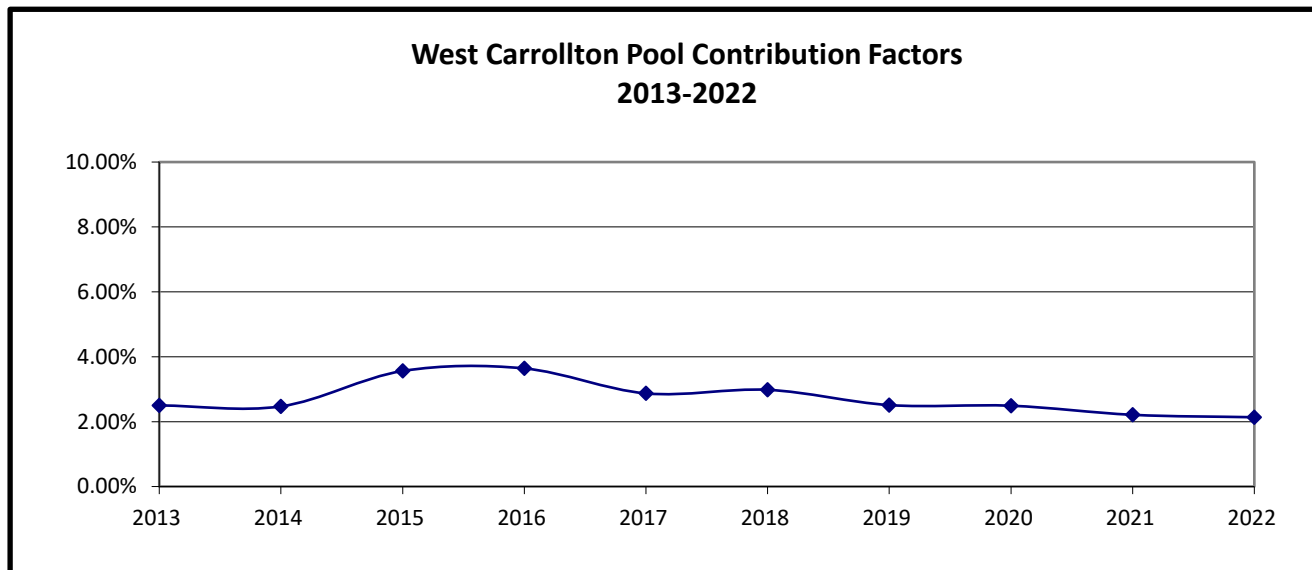
Source: Association's internal records



Last Ten Years

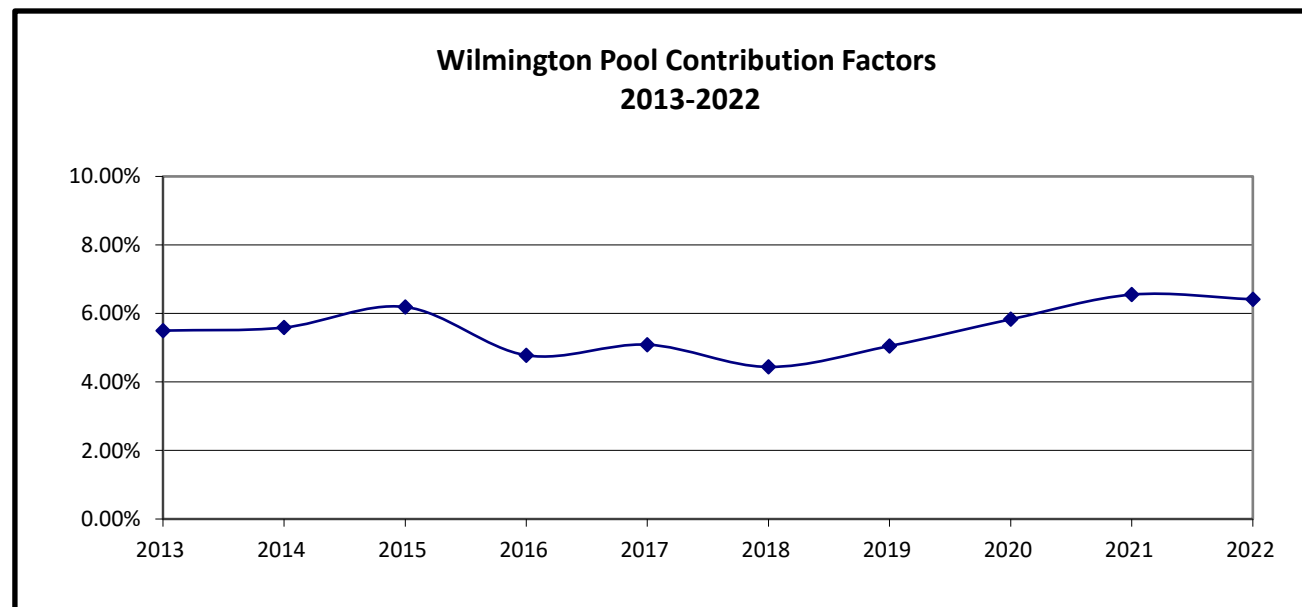
Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$10,618	13,143	22	49	62	\$28,340,006	\$11,506,423	2.50%
2014	\$8,931	13,143	22	46	63	\$28,876,147	\$11,021,168	2.47%
2015	\$33,748	13,143	22	45	63	\$29,414,833	\$10,888,826	3.56%
2016	\$40,289	13,143	22	44	64	\$30,933,346	\$11,436,574	3.64%
2017	\$22,794	13,143	23	42	64	\$31,209,386	\$11,060,789	2.87%
2018	\$16,133	13,143	21	42	63	\$33,595,978	\$12,941,859	2.98%
2019	\$16,133	13,143	21	42	63	\$33,595,978	\$12,941,859	2.51%
2020	\$14,259	13,143	21	42	68	\$33,769,391	\$13,879,960	2.49%
2021	\$13,571	13,143	22	52	64	\$34,246,229	\$9,901,609	2.21%
2022	\$11,070	12,850	22	54	64	\$33,938,286	\$12,970,833	2.13%

Source: Association's internal records



Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$46,544	12,520	21	122	126	\$72,608,144	\$19,315,329	5.50%
2014	\$45,623	12,520	18	117	122	\$74,109,343	\$17,250,306	5.59%
2015	\$61,564	12,520	21	114	123	\$74,328,087	\$17,262,613	6.19%
2016	\$35,691	12,520	21	114	126	\$75,583,201	\$17,710,188	4.78%
2017	\$44,388	12,520	21	111	134	\$76,275,394	\$18,793,497	5.09%
2018	\$46,241	12,520	21	118	131	\$81,058,086	\$23,420,103	4.44%
2019	\$46,241	12,520	21	118	131	\$81,058,086	\$23,420,103	5.05%
2020	\$62,253	12,520	18	140	135	\$83,784,532	\$22,632,528	5.83%
2021	\$97,941	12,520	22	124	136	\$84,552,649	\$20,334,591	6.55%
2022	\$95,146	12,399	20	125	142	\$90,304,603	\$22,136,394	6.41%

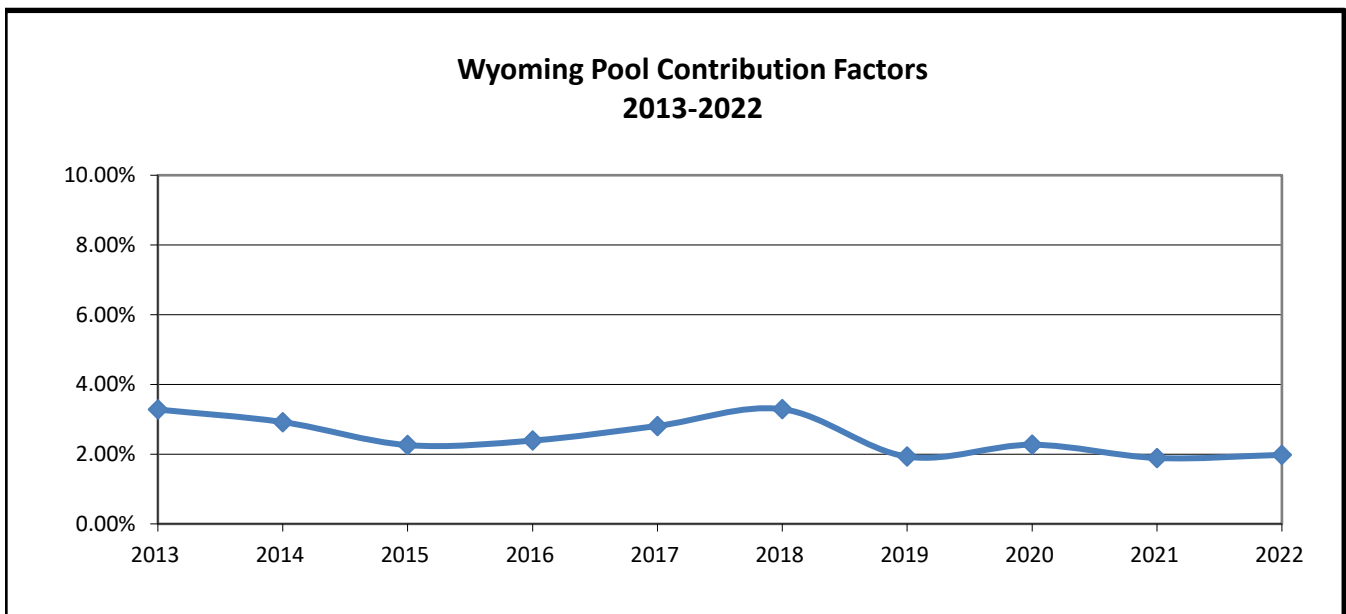
Source: Association's internal records





Membership Year	Risk Exposure							Pool Contribution Factors
	(Non-Police)							
	Average Annual Losses	Population	Full-Time Sworn Police	Full-Time Employees	Titled Vehicles	PP/RP Values	Net Operating Expenditures	
2013	\$39,706	8,428	17	36	39	\$28,587,034	\$9,528,956	3.28%
2014	\$28,739	8,428	16	32	39	\$28,119,925	\$9,256,904	2.92%
2015	\$17,522	8,428	16	31	39	\$28,099,422	\$8,085,768	2.26%
2016	\$23,742	8,428	16	31	33	\$29,508,384	\$8,915,723	2.39%
2017	\$34,521	8,428	16	31	37	\$31,586,153	\$8,546,218	2.97%
2018	\$11,630	8,428	16	31	37	\$35,866,497	\$9,860,142	3.29%
2019	\$11,630	8,428	22	26	37	\$35,866,497	\$9,860,142	1.93%
2020	\$18,885	8,428	19	35	38	\$37,524,239	\$10,919,777	2.27%
2021	\$14,024	8,428	19	35	38	\$37,756,374	\$10,135,719	1.89%
2022	\$18,089	8,550	17	32	40	\$39,446,852	\$11,626,496	1.98%

Source: Association's internal records



Miami Valley Risk Management Association  
Operating Information by Component  
Last Ten Years

Schedule 29

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of Members	20	20	20	20	20	20	21	21	21	21
Number of Staff	4	4	4	4	4	4	4	4	3	3
Number of Claims	375	422	369	390	377	416	310	261	276	284
Number of Training Sessions	24	22	24	32	34	57	48	26	25	39

Note: All data as of 12/31/2022

Note: The MVRMA staff attends to its members' risk management and risk financing needs, acts as a clearing house for risk related information, administers a claims/litigation management program, and provides extensive safety/loss control consulting and training.

Source: Employment Records, Association's internal records

# MIAMI VALLEY RISK MANAGEMENT ASSOCIATION

**Analysis of Unpaid Loss and LAE as of December 31, 2022**

March 30, 2023



1 Concourse Parkway, Suite 645  
Atlanta, GA 30328  
770.587.0351  
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**Commitment Beyond Numbers**



1 Concourse Parkway, Suite 645  
Atlanta, GA 30328  
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Timothy C. Mosler, FCAS, MAAA  
Principal and Consulting Actuary  
tmosler@pinnacleactuarial.com

March 30, 2023

Mr. Tom Judy  
Executive Director  
Miami Valley Risk Management Association  
4625 Presidential Way  
Kettering, OH 45429-5706

Re: Analysis of Unpaid Loss and LAE as of December 31, 2022

Dear Mr. Judy:

Attached is Pinnacle Actuarial Resources, Inc.'s (Pinnacle's) report on the unpaid loss and loss adjustment expense (LAE) amounts of Miami Valley Risk Management Association (MVRMA) as of December 31, 2022.

Attention is called to the section of the report entitled Distribution, which sets out the limits on distribution of the report.

We have prepared this report to document our analysis and so that MVRMA may comply with requirements of the state of Ohio concerning the need for a written actuarial report. A copy of this report should be retained in MVRMA's offices for a seven-year period in support of the loss reserves that will be contained in the 2022 financial statement. The report should be made available for insurance regulatory examination, upon request.

This report contains workpapers, trade secrets, and confidential information of both MVRMA and Pinnacle, and as such, it is not intended to be subject to disclosure requirements under any Freedom of Information Act or similar laws.

The authors of this report are members of the American Academy of Actuaries and meet its qualification standards to render the actuarial opinion contained herein. We have enjoyed working with you in the preparation of this report. Please let us know if you have any questions.

Very truly yours,

A handwritten signature in blue ink that reads "Timothy C. Mosler".

Timothy C. Mosler, FCAS, MAAA  
Principal and Consulting Actuary  
Direct Dial: 678.894.7254

A handwritten signature in blue ink that reads "Daniel A. Linton".

Daniel A. Linton, FCAS, MAAA  
Senior Consulting Actuary  
Direct Dial: 309.807.2335

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## EXHIBITS

# Miami Valley Risk management Association

## Analysis of Unpaid Loss and LAE as of December 31, 2022

### PURPOSE AND SCOPE

Pinnacle Actuarial Resources, Inc. (Pinnacle) was retained by Miami Valley Risk Management Association (MVRMA) to prepare an actuarial analysis of MVRMA's loss and loss adjustment expense (LAE) experience for the purpose of developing estimates of unpaid loss and LAE as of December 31, 2022.

This report was prepared for the internal use of MVRMA management to present our findings with respect to this analysis. It is our understanding that MVRMA management will consider our findings for the purposes of establishing liability estimates for external financial reporting and internal management reporting.

Our report is not intended or necessarily suitable for any other purpose.

In this report, we develop an actuarial central estimate of MVRMA's unpaid loss and LAE as of December 31, 2022. This actuarial central estimate is intended to represent an expected value over a range of reasonably foreseeable outcomes. The actuarial central estimate was arrived at through evaluation of the results of various actuarial methods and models applied to MVRMA's experience. As such, the derivation of this estimate does not reflect extreme events believed to have a remote possibility of occurring. We consider the actuarial central estimate suitable for use in financial reporting contexts.

The exhibits attached in support of our conclusions are an integral part of this report. This section has been prepared so that our actuarial assumptions and judgments are documented. Judgments about the analysis and findings presented in this report should be made only after considering the report in its entirety. Our projections are predicated on a number of assumptions as to future conditions and events. These assumptions are documented in subsequent sections of this report, and should be understood in order to place the actuarial estimates in their appropriate context. In addition, these projections are subject to a number of reliances and limitations, as described in subsequent sections of this report.

We are available to answer any questions that may arise regarding this report. We assume that the user of this report will seek such explanation on any matter in question.

The scope does not include quantification of the uncertainty in our estimates. However, our report includes commentary on this uncertainty to assist in understanding the financial implications of our results.

For the purposes of our report, the “accounting date” of December 31, 2022 is the date used to separate paid and unpaid claim amounts in MVRMA’s financial statement. Transactions through the “valuation date” of December 31, 2022 are included in the data used in our analysis. No account has been taken in the projections of developments subsequent to the “review date” of January 31, 2023.

Paid losses provided to us are net of salvage and subrogation. Therefore loss reserve estimates derived from this data would implicitly anticipate salvage and subrogation. The other recoverables considered in our reserve estimates are individual member liabilities and excess insurance.

All loss and LAE amounts are stated on an undiscounted basis as regards future investment income.

Throughout this report, the use of the term *loss* without modification includes loss and allocated loss adjustment expenses (ALAE), but does not include unallocated loss adjustment expenses (ULAE).

This actuarial report is being provided to MVRMA to be retained for a period of seven years in its administrative offices and to be available for examination by its members and for regulatory examination, if appropriate.

Loss adjustment expenses include but are not limited to the costs of administering, determining coverage for, settling, or defending claims even if it is ultimately determined that the claim is invalid.

## DISTRIBUTION

Our report is delivered under the following terms and conditions:

- This report is provided to MVRMA solely for the intended purpose, and may not be referenced or distributed to any other party without our prior written consent
- This report has been prepared for use by persons technically competent in the areas covered and with the necessary background information
- Draft versions of this report must not be relied upon by any person for any purpose
- This report is available for regulatory examination



A copy of this report may be shared with MVRMA's independent auditors solely in the context of their performing regular audit activities

We accept no responsibility for any consequences arising from any third party relying on this report. If we agree to provide this report to a third party, you are responsible for ensuring that the report is provided in its entirety, that the third party is made aware of the fact that they are not entitled to rely upon it, and that they may not distribute the report to any other party.

This report contains workpapers, trade secrets, and confidential information of both MVRMA and Pinnacle. Because of the nature of the material contained in the report, it is not intended to be subject to disclosure requirements under any Freedom of Information Act or similar laws.

## BACKGROUND

MVRMA has provided insurance coverage for its members since December 1, 1988. As of December 31, 2022, the pool was comprised of the following 22 entities: Beavercreek, Bellbrook, Blue Ash, Centerville, Englewood, Fairfield, Kettering, Madeira, Mason, Miamisburg, Montgomery, NAWA, Piqua, Sidney, Springdale, Tipp City, Troy, Vandalia, the Village of Indian Hill, West Carrollton, Wilmington and Wyoming. MVRMA provides coverage for several lines of insurance including commercial property, comprehensive general liability, automobile liability, automobile physical damage, law enforcement liability, public official's liability, crime, ambulance attendants, and boiler and machinery.

This report groups all losses into three categories: automobile liability (AL), general liability (GL), and property which includes auto physical damage (Property). Each line is analyzed for annual periods December 1, 1988 through December 31, 2022. The results of the report are not intended to apply to any other entities, lines of insurance, or periods.

Funding for MVRMA's loss and LAE is accomplished via annually budgeted contributions. In the event the pool requires additional funds, such amounts can be obtained via a call for special assessments by MVRMA's Board of Trustees for supplementary payments.

Prior to December 31, 1994, claim adjustment services were provided to MVRMA through Gallagher Bassett Insurance Services, Incorporated. Gallagher Bassett continued to adjust run-off claims for the period December 1, 1988 through December 31, 1994. As of December 31, 2008, there were no outstanding claims from this claim period. Effective January 1, 1995, MVRMA began to employ an in-house claims staff.



### Data

We were provided with “gross” paid and incurred loss and ALAE by accident period, by line of business. The term “gross” means before consideration of recoverables from excess carriers and member deductibles. Paid losses are net of salvage and subrogation.

Detailed claims data was provided to us by MVRMA’s claims department for the 2016 and 2018 through 2022 accident periods. It is our understanding that there has been no claim activity for accident periods prior to 2016 as well as the 2017 accident period since our prior analysis as of December 31, 2021. Excess insurance limits were provided by MVRMA.

In our review, we have relied on listings and other relevant data, prepared by Tom Judy, Executive Director of MVRMA. We evaluated that data for reasonableness and consistency. We are relying on the audit procedures of MVRMA's independent public accountant and claims auditor to verify the accuracy of the data underlying our analysis. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete.

### Self-Insured Retention History

The following table details the MVRMA self-insured retention (SIR) per occurrence for casualty and property coverages separately by accident year.

Accident Year	Casualty - SIR	Property - SIR
1993 & Prior	\$250,000	\$250,000
1994	\$250,000	\$100,000
1995	\$250,000	\$150,000
1996	\$250,000	\$250,000
1997-1998	\$500,000	\$250,000
1999-2001	\$500,000	\$150,000
2002	\$500,000	\$250,000
2003-2004	\$1,000,000	\$250,000
2005-2008	\$1,000,000	\$200,000
2009	\$1,000,000	\$200,000/\$250,000
2010-2022	\$500,000	\$250,000

The first \$2,500 of each occurrence is treated as a deductible by the pool member who suffered the loss. MVRMA did not have an aggregate stop loss policy for periods prior to December 31, 1990; however, there is an \$850,000 aggregate “property and casualty combined” stop loss in place for the accident periods 1991 through 1993 and a \$950,000 aggregate “casualty only” stop loss for the 1994 and 1995 accident periods. There is no aggregate stop loss policy for accident periods 1996 and

subsequent; rather MVRMA is aggregating premiums previously paid for such coverage into an accumulating “shock loss” fund to be used at the discretion of the MVRMA Board.

### Excess Insurance

The following table is a synopsis of the historical excess liability coverage carried by MVRMA:

Accident Year	Liability Excess Coverage	Provider
1997-2002	\$10M excess of \$1M	National Public Entity Excess Program (NPX)
2003	\$11M excess of \$1M	Government Entities Mutual, Inc. (GEM)/ Endurance Specialty Insurance Limited
2004	\$1M excess of \$1M \$5M excess of \$2M	GEM Insurance Co. of the State of PA (AIG)
2005	\$1M excess of \$1M \$5M excess of \$2M	GEM Illinois Union Insurance Company (ACE)
2006-2008	\$1M excess of \$1M \$8M excess of \$2M	GEM Munich Reinsurance America
2009	\$1M excess of \$1M \$8M excess of \$2M	GEM General Reinsurance Corporation
2010-2012	\$1.5M excess of \$500K \$8M excess of \$2M	GEM General Reinsurance Corporation
2013-2015	\$2.5M excess of \$500K \$7M excess of \$3M	GEM Genesis
2016-2022	\$4.5M excess of \$500K \$7M excess of \$5M	GEM Genesis

GEM is a protected cell reinsurance captive domiciled in the District of Columbia. GEM is sponsored by the National Association of Government Entity Programs, Inc. (NAGEP), a non-profit association incorporated in the District of Columbia.

## FINDINGS

Based on our analysis of MVRMA's experience as of December 31, 2022, and subject to the considerations set forth in the *Reliances and Limitations* section, we have reached the conclusions set forth below.

### Unpaid Loss and LAE as of December 31, 2022

The estimated total undiscounted unpaid loss and LAE as of December 31, 2022 is \$3,120,260. This amount is net of reinsurance and member deductibles. It compares to an estimated unpaid amount of \$4,447,056 from our analysis as of December 31, 2021.

### Development in Net Loss Estimates from Prior Analysis

The table below compares our net ultimate loss estimate as of December 31, 2022 to our estimate as of December 31, 2021 for accident years 2021 and prior. Our estimates have decreased by \$1,847,000. The decrease is driven primarily by favorable experience for general liability.

<b>MIAMI VALLEY RISK MANAGEMENT ASSOCIATION</b>				
Comparison of Net Ultimate Loss to Prior Ultimate Loss (in \$000s)				
Prior to Consideration of Member's Deductibles				
Accident Year	Evaluation Date		Difference	Percent Change
	@12/31/2021	@12/31/2022		
1989-2009	\$19,665	\$19,665	\$0	0.0%
2010	1,524	1,524	0	0.0%
2011	1,291	1,291	0	0.0%
2012	1,140	1,140	0	0.0%
2013	1,419	1,419	0	0.0%
2014	2,193	2,193	0	0.0%
2015	1,048	1,048	0	0.0%
2016	1,440	1,318	(122)	-8.5%
2017	1,215	1,215	0	0.0%
2018	1,718	1,425	(293)	-17.1%
2019	1,796	1,576	(220)	-12.3%
2020	2,440	2,003	(437)	-17.9%
2021	2,623	1,849	(774)	-29.5%
Total	\$39,512	\$37,665	(\$1,847)	-4.7%

## ANALYSIS

Our analysis consisted of the steps outlined below.

### Development Patterns

Our projection of future claim reporting and payment is based on MVRMA's historical experience. Using historical loss development experience provided by MVRMA, we select report-to-report (RTR) development factors. In cases for which MVRMA's historical data is not sufficiently credible, stable, or mature, we have supplemented MVRMA's experience with benchmark reporting and payment patterns.

Benchmark patterns are constructed internally by Pinnacle, drawing upon available relevant sources of loss development data. Benchmarks are revised periodically as new information and trends emerge. While each company's own development can be expected to vary from the benchmark based on individual circumstances, we believe the benchmark is an appropriate supplement to the analysis of MVRMA's data, as it represents our current judgment as to the typical emergence of loss that can be expected for that class of business.

The selected development patterns are used for both the development and Bornhuetter-Ferguson (B-F) projection methods.

### Initial Expected Loss Costs

The selected initial expected loss costs (IELCs or loss per exposure) are based on a review of the paid and incurred loss development methods, the results of prior analyses, insurance industry indications, and observed trends. These IELCs form the basis of the B-F and expected loss projection methods.

### Selected Ultimate Losses

In general, our selected ultimate losses are based on the results of various projection methods. Our selections are based on judgment reflecting the range of estimates produced by the methods, and the strengths and weaknesses of each method. These methods are described in the *Description of Projection Methods* section of this report.

### Unallocated Loss Expense Reserve

We estimate the ULAE reserve based on a ratio of paid ULAE to paid loss by line of business. On Summary, Exhibit 4, the industry paid ULAE to paid loss ratio is applied to the estimated IBNR amounts and one-half of this ratio is applied to case reserves. This method is derived from the expectation that half of ULAE is incurred when a claim is opened and the other half at closure.

### General Overview of Exhibits

The Summary exhibits combine all lines of business and compare the indicated reserves and carried reserves in total. Exhibit 1.4 shows our calculation of the indicated ULAE reserve. Exhibit 1.3 summarizes member deductible losses by AY, while Exhibit 1.2 summarizes ultimate losses by AY prior to the application of any member deductibles. Note that the aggregate retention is applied to the appropriate AY's and affects AY 1993. Exhibit 1.1 summarizes the indicated reserves from Exhibit 1.2 before and after application of the member deductibles.

### Automobile Liability

The auto liability analysis is arranged in 19 exhibits. Exhibit 19 shows the summarized data from the loss runs provided by MVRMA for this analysis. The claim summary and ultimate claim projection can be found in Exhibits 15 through 18. Exhibit 18 shows AL's historical reported claim experience and our selected development factors. For nearly all years, all claims are reported by 36 months. Exhibit 15 summarizes the claim indications including indicated IBNR claims.

Exhibits 13 and 14 show the incurred and paid loss triangles limited to \$500,000 and our initial selected development factors, respectively. On Exhibit 12, we estimate \$1,000,000 limits development patterns based on the \$500,000 limits development patterns and an assumed 6 month lag.

Exhibits 8 through 10 contain the development method indications using the selected development factors from Exhibits 12 through 14. Exhibit 11 shows indications based on industry development.

Exhibits 7.1 through 7.3 calculate the expected loss cost used in the B-F methods found in Exhibits 5 and 6. First, a limit factor is selected to adjust all AY's to a \$500,000 limit (Exhibit 7.3). Second, an initial ultimate loss is selected based on the development methods (Exhibit 7.2). Next, AY loss costs based on the initial selected ultimate losses are trended to AY 2022 with an initial loss cost selected for AY 2022. Finally, the expected loss cost for all AY's are calculated by detrending the selected AY 2022 loss cost (Exhibit 7.1).

We select ultimate losses at retained limits on Exhibit 4. Exhibit 3 provides a comparison of selected ultimate losses to those selected in our prior analysis. Exhibit 2 calculates the ultimate frequency, ultimate severity, and ultimate loss costs based on the selected ultimate losses in Exhibit 4. Exhibit 1 summarizes the loss indications including indicated IBNR losses.

The exhibits for GL and Property follow a similar layout as the AL exhibits.

Exhibits in support of the comprehensive annual financial report (AFR) are also provided at the end of the analysis.

## RELIANCES AND LIMITATIONS

### Inherent Uncertainty

Projections of loss and LAE liabilities are subject to potentially large errors of estimation, since the ultimate disposition of claims incurred prior to the financial statement date, whether reported or not, is subject to the outcome of events that have not yet occurred. Examples of these events include jury decisions, court interpretations, legislative changes, changes in the medical condition of claimants, public attitudes, and social/economic conditions such as inflation. Any estimate of future costs is subject to the inherent limitation on one's ability to predict the aggregate course of future events. It should therefore be expected that the actual emergence of losses and LAE will vary, perhaps materially, from any estimate. Thus, no assurance can be given that MVRMA's actual loss and LAE liabilities will not ultimately exceed the estimates contained herein. In our judgment, we have employed techniques and assumptions that are appropriate, and the estimates presented herein are reasonable, given the information currently available.

Note that a quantification of this uncertainty would likely reflect a range of reasonable, favorable and adverse scenarios, but not necessarily a range of all possible outcomes. Further, the proper application of any range is dependent on the context. MVRMA's financial reports are governed by accounting standards, and such standards vary among jurisdictions. Under current accounting standards, the ends of a range that is illustrative of uncertainty would likely not be suitable for financial reporting purposes.

### Sensitivity Analysis

In performing this analysis, the sensitivity of key variables was considered. A number of assumptions about model variables are made in our analysis. We consider the key variables to include the selection of RTR factors, initial expected loss costs and loss cost trend factors. The overall results are potentially sensitive to any of these, and reasonable alternative selections could change the results significantly (favorably or adversely).

### Data Reliance

Throughout this analysis, we have relied on historical data and other quantitative and qualitative information supplied by MVRMA. We have not independently audited or verified this information; however, we have reviewed it for reasonableness and internal consistency. We have assumed that the information is complete and accurate, and that we have been provided with all information relevant to the analysis of MVRMA's ultimate losses and LAE. The accuracy of our results is dependent upon the accuracy and completeness of the underlying data; therefore, any material discrepancies discovered in this data should be reported to us and this report amended accordingly, if warranted.

MVRMA has indicated that it will require that their independent certified public accountant subject the data significant to our loss and LAE projections to testing procedures.



### Extraordinary Future Emergence

We have not anticipated any extraordinary changes to the legal, social, or economic environment that might affect the cost, frequency, or future reporting of claims. In addition, our estimates make no provision for potential future claims arising from loss causes not represented in the historical data (e.g., new types of mass torts or latent injuries, terrorist acts, etc.), except where claims of these types are included but not identified in the reported claims and are implicitly analyzed.

### Projections by Accident Year

Consistent with the purpose of our engagement, the focus of our analysis was on MVRMA's overall reserves for unpaid claims. As such, projections shown in this report for each accident year should be viewed in the context of the entire portfolio of liabilities, not necessarily as best estimates for individual accident years.

### Excess Insurance Collectability

Our estimates are presented net of excess insurance. Based solely on inquiries made of MVRMA management, we understand that none of MVRMA's excess insurance is considered uncollectible. An independent evaluation of the quality of security provided by MVRMA's excess insurers is outside the scope of our engagement. We have assumed that all of MVRMA's excess insurance protection will be valid and collectible. Contingent liability may exist for any excess insurance recoveries that may prove to be uncollectible. Should such liabilities materialize, they would be in addition to the net liability estimates contained herein.

### Underlying Assets

We have not examined the assets underlying MVRMA's loss and LAE reserves, and we have formed no opinion as to the validity or value of these assets. We have assumed throughout the analysis that MVRMA's loss and LAE reserves are backed by valid assets with suitably scheduled maturities and/or adequate liquidity to meet cash flow requirements.

## DESCRIPTION OF PROJECTION METHODS

The choice of method to estimate ultimate losses should consider, among other things, the line of business, the number of years of experience, and the age of the experience year being developed. In general, these methods can be applied to losses, ALAE, and various measures of claim counts.

### Incurred Development Method

The incurred development method is based upon the assumption that the relative change in a given year's incurred loss estimates from one evaluation point to the next is similar to the relative change in



prior years' incurred loss estimates at similar evaluation points. In utilizing this method, actual annual historical incurred loss data is evaluated. Successive years can be arranged to form a triangle of data.

RTR development factors are calculated to measure the change in cumulative incurred costs from one evaluation point to the next. These historical RTR factors and comparable benchmark factors form the basis for selecting the RTR factors used in projecting the current valuation of losses to an ultimate basis.

This method's implicit assumption is that the relative adequacy of case reserves has been consistent over time, and that there have been no material changes in the rate at which claims have been reported.

#### Paid Development Method

The paid development method is similar to the incurred development method; however, case reserves are excluded from the analysis. While this method has the disadvantage of not recognizing the information provided by current case reserves, it has the advantage of avoiding potential distortions in the data due to changes in case reserving methodology.

This method's implicit assumption is that the rate of payment of claims has been relatively consistent over time.

#### Case Reserve Development Method

The case reserve development technique derives case reserve development factors through an analysis of the historical development of case reserves by period. The changes measured by the case reserve development technique include payments associated with the historical case reserves and subsequent reserve amounts for those claims remaining open.

The case reserve development factors are applied to the current case reserves by period to estimate their ultimate settlement value. Payments to date are then added to determine the ultimate losses for each period.

#### Expected Loss Method

In the expected loss method, ultimate loss projections are based upon a prior measure of the anticipated losses, such as number of cars, expenditures, etc. An expected loss cost is applied to the measure of exposure to determine estimated ultimate losses for each year.

Actual losses are not considered in this calculation. This method has the advantage of stability over time because the ultimate loss estimates do not change unless the expected loss costs change.

However, this advantage of stability is offset by a lack of responsiveness since this method does not consider actual loss experience as it emerges.

This method is entirely dependent on the assumption that the loss cost per unit of exposure is a good indication of ultimate losses.

#### Incurred Bornhuetter-Ferguson Method

The incurred B-F method is essentially a blend of two other methods. The first method is the loss development method whereby actual incurred losses are multiplied by an expected loss development factor. For slow reporting coverages, the loss development method can lead to erratic and unreliable projections because a relatively small swing in early reportings can result in a large swing in ultimate projections. The second method is the expected loss method whereby the IBNR estimate equals the difference between a predetermined estimate of expected losses and actual incurred losses. This has the advantage of stability, but it does not respond to actual results as they emerge.

The incurred B-F method combines these two methods by setting ultimate losses equal to actual incurred losses plus expected unreported losses. As an experience year matures and expected unreported losses become smaller, the initial expected loss assumption becomes gradually less important.

Two parameters are needed to apply the B-F method: the initial expected loss cost (IELC) and the expected reporting pattern. The IELC is selected as described in the *Analysis* section, while the expected reporting pattern is based on the incurred loss development method described above.

This method is often used for long-tail lines and in situations where the incurred loss experience is relatively immature or lacks sufficient credibility for the application of other methods.

#### Paid Bornhuetter-Ferguson Method

The paid B-F method is analogous to the incurred B-F method using paid losses and development patterns in place of incurred losses and patterns.

## Exhibits

Miami Valley Risk Management Association  
Summary  
December 31, 2022

Indicated Reserves

Gross of Member Deductible		
(1)	Selected Ultimate Loss	\$40,126,083
(2)	Application of Aggregate Retention	\$144,133
(3)	Retained Ultimate Loss	\$39,981,950
(4)	Retained Paid Loss	\$36,827,216
(5)	Indicated Loss Reserves	\$3,154,734
Member Deductible		
(6)	Indicated Ultimate Loss	\$3,955,061
(7)	Paid Loss	\$3,804,253
(8)	Indicated Loss Reserves	\$150,808
Net of Member Deductible		
(9)	Indicated Loss Reserves	\$3,003,926
(10)	Indicated Unallocated Loss Expense Reserves	\$116,334
(11)	Indicated Loss and Loss Expense Reserves	\$3,120,260

Notes:

- (1) From Summary, Exhibit 2, Col (5)
- (2) = Summary, Exhibit 2, Col (5) - Exhibit 2, Col (7)
- (3) From Summary, Exhibit 2, Col (7)
- (4) From Summary, Exhibit 2, Col (12)
- (5) = (3) - (4)
- (6) From Summary, Exhibit 3, Col (5)
- (7) From Summary, Exhibit 3, Col (9)
- (8) = (6) - (7)
- (9) = (5) - (8)
- (10) From Summary, Exhibit 4, Row (11)
- (11) = (9) + (10)

Miami Valley Risk Management Association  
Summary  
December 31, 2022

Summary of Estimated Ultimate Retained Loss Prior to Consideration of Member Deductible  
Retained Limits

Accident Year	Ultimate Loss						Paid Loss				
	Automobile Liability	General Liability	Property Liability	Total	Aggregate Retention	Retained Losses	Automobile Liability	General Liability	Property Liability	Total	Retained Losses
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1989	\$111,919	\$207,853	\$124,141	\$443,913		\$443,913	\$111,919	\$207,853	\$124,141	\$443,913	\$443,913
1990	18,683	439,863	32,734	491,280		491,280	18,683	439,863	32,734	491,280	491,280
1991	13,946	84,015	75,626	173,587	850,000	173,587	13,946	84,015	75,626	173,587	173,587
1992	39,293	139,376	63,858	242,527	850,000	242,527	39,293	139,376	63,858	242,527	242,527
1993	329,494	600,979	63,660	994,133	850,000	850,000	329,494	600,979	63,660	994,133	850,000
1994	126,181	106,065	96,833	329,079	950,000	329,079	126,181	106,065	96,833	329,079	329,079
1995	157,537	156,790	85,639	399,966	950,000	399,966	157,537	156,790	85,639	399,966	399,966
1996	75,097	357,926	92,901	525,924		525,924	75,097	357,926	92,901	525,924	525,924
1997	572,332	706,526	225,205	1,504,063		1,504,063	572,332	706,526	225,205	1,504,063	1,504,063
1998	98,687	554,289	135,150	788,126		788,126	98,687	554,289	135,150	788,126	788,126
1999	203,725	657,094	392,466	1,253,285		1,253,285	203,725	657,094	392,466	1,253,285	1,253,285
2000	81,660	164,560	130,204	376,424		376,424	81,660	164,560	130,204	376,424	376,424
2001	555,168	497,423	505,931	1,558,522		1,558,522	555,168	497,423	505,931	1,558,522	1,558,522
2002	167,747	1,347,177	369,496	1,884,420		1,884,420	167,747	1,347,177	369,496	1,884,420	1,884,420
2003	168,870	269,762	265,463	704,095		704,095	168,870	269,762	265,463	704,095	704,095
2004	49,417	511,964	229,621	791,002		791,002	49,417	511,964	229,621	791,002	791,002
2005	243,966	857,801	369,470	1,471,237		1,471,237	243,966	857,801	369,470	1,471,237	1,471,237
2006	145,431	915,795	497,206	1,558,432		1,558,432	145,431	915,795	497,206	1,558,432	1,558,432
2007	275,826	312,120	405,891	993,837		993,837	275,826	312,120	405,891	993,837	993,837
2008	136,527	856,672	654,562	1,647,761		1,647,761	136,527	856,672	654,562	1,647,761	1,647,761
2009	31,122	1,177,813	324,515	1,533,450		1,533,450	31,122	1,177,813	324,515	1,533,450	1,533,450
2010	161,512	972,613	389,384	1,523,508		1,523,508	161,512	972,613	389,384	1,523,508	1,523,508
2011	87,731	323,802	879,940	1,291,472		1,291,472	87,731	323,802	879,940	1,291,472	1,291,472
2012	38,269	542,610	559,108	1,139,987		1,139,987	38,269	542,610	559,108	1,139,987	1,139,987
2013	234,785	601,882	582,706	1,419,374		1,419,374	234,785	601,882	582,706	1,419,374	1,419,374
2014	104,340	925,867	1,162,693	2,192,900		2,192,900	104,340	925,867	1,162,693	2,192,900	2,192,900
2015	82,316	314,175	651,268	1,047,759		1,047,759	82,316	314,175	651,268	1,047,759	1,047,759
2016	145,899	724,000	448,203	1,318,103		1,318,103	145,899	667,691	448,203	1,261,794	1,261,794
2017	65,054	541,861	607,680	1,214,595		1,214,595	65,054	541,861	607,680	1,214,595	1,214,595
2018	78,866	752,000	594,000	1,424,866		1,424,866	78,866	668,154	571,312	1,318,332	1,318,332
2019	71,000	665,000	839,639	1,575,639		1,575,639	65,126	403,539	839,639	1,308,304	1,308,304
2020	73,000	855,000	1,074,816	2,002,816		2,002,816	69,079	541,959	1,074,816	1,685,854	1,685,854
2021	145,000	650,000	1,054,000	1,849,000		1,849,000	120,307	120,702	976,614	1,217,623	1,217,623
2022	325,000	1,065,000	1,071,000	2,461,000		2,461,000	51,820	67,322	565,640	684,782	684,782
Total	\$5,215,400	\$19,855,672	\$15,055,010	\$40,126,083		\$39,981,950	\$4,907,732	\$17,614,041	\$14,449,576	\$36,971,349	\$36,827,216

Notes:

- |     |  |          |                       |
|-----|--|----------|-----------------------|
| (2) | From Auto Liability (AB, AD), Exhibit 1, Col (2)           | (8)-(10) | Provided by MVRMA     |
| (3) | From General Liability, Exhibit 1, Col (2)                 | (11)     | = (8) + (9) + (10)    |
| (4) | From Property and Auto Physical Damage, Exhibit 1, Col (2) | (12)     | = (11) subject to (6) |
| (5) | = (2) + (3) + (4)  |          |                       |
| (6) | Provided by MVRMA  |          |                       |
| (7) | = (5) subject to (6)                                       |          |                       |

Miami Valley Risk Management Association  
Summary  
December 31, 2022

Summary of Estimated Member Deductible Ultimate Loss

Accident Year	Ultimate Loss				Paid Loss			
	Automobile Liability	General Liability	Property Liability	Total	Automobile Liability	General Liability	Property Liability	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1989								
1990								
1991								
1992								
1993								
1994								
1995								
1996								
1997								
1998								
1999								
2000								
2001								
2002								
2003								
2004								
2005								
2006	\$48,974	\$55,888	\$103,904	\$208,766	\$48,974	\$55,888	\$103,904	\$208,766
2007	76,272	54,069	101,827	232,168	76,272	54,069	101,827	232,168
2008	46,288	71,826	134,525	252,640	46,288	71,826	134,525	252,640
2009	30,922	58,683	119,127	208,732	30,922	58,683	119,127	208,732
2010	43,334	68,618	87,270	199,222	43,334	68,618	87,270	199,222
2011	43,911	67,033	127,474	238,418	43,911	67,033	127,474	238,418
2012	24,213	48,604	92,085	164,902	24,213	48,604	92,085	164,902
2013	40,252	54,455	112,692	207,399	40,252	54,455	112,692	207,399
2014	64,282	72,415	103,333	240,030	64,282	72,415	103,333	240,030
2015	47,339	64,046	94,439	205,824	47,339	64,046	94,439	205,824
2016	71,966	64,852	124,197	261,014	71,966	64,852	124,197	261,014
2017	40,684	49,966	101,811	192,461	40,684	49,966	101,811	192,461
2018	36,140	61,474	134,358	231,972	36,140	61,474	131,858	229,472
2019	43,237	74,949	130,981	249,167	40,750	74,949	130,981	246,680
2020	32,317	41,258	143,735	217,310	32,317	41,258	143,735	217,310
2021	46,935	31,679	211,450	290,063	46,935	30,392	203,977	281,303
2022	45,086	76,073	233,815	354,974	32,162	35,554	150,197	217,913
Total	\$782,153	\$1,015,887	\$2,157,021	\$3,955,061	\$766,742	\$974,081	\$2,063,430	\$3,804,253

Notes:

- (2)-(4) Provided by MVRMA  
 (5) = (2) + (3) + (4)  
 (6)-(8) Provided by MVRMA  
 (9) = (6) + (7) + (8)

Miami Valley Risk Management Association  
Summary  
December 31, 2022

Indicated Unallocated Loss Adjustment Expense Reserves

Accident Year	Case Reserves				IBNR			
	Automobile Liability	General Liability	Property Liability	Total	Automobile Liability	General Liability	Property Liability	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1989								
1990								
1991								
1992								
1993								
1994								
1995								
1996								
1997								
1998								
1999								
2000								
2001								
2002								
2003								
2004								
2005								
2006	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	32,628	0	32,628	0	23,680	0	23,680
2017	0	0	0	0	0	0	0	0
2018	0	42,448	20,000	62,448	0	41,397	2,688	44,085
2019	4,987	142,264	0	147,251	887	119,197	0	120,084
2020	0	15,459	0	15,459	3,921	297,582	0	301,503
2021	0	18,089	71,875	89,965	24,693	511,209	5,511	541,412
2022	171,804	117,516	322,695	612,015	101,376	880,161	182,665	1,164,202
Total	\$176,791	\$368,406	\$414,571	\$959,767	\$130,877	\$1,873,226	\$190,864	\$2,194,967
	(10)		Selected ULAE Expense to Loss Ratio		4.9%	4.3%	4.3%	4.3%
	(11)		ULAE Reserves		\$10,744	\$88,469	\$17,120	\$116,334

Notes: Losses Net of Deductibles  
 (2)-(4) Provided by MVRMA  
 (5) = (2) + (3) + (4)  
 (6) From Auto Liability (AB, AD), Exhibit 1, Col (6)  
 (7) From General Liability, Exhibit 1, Col (6)  
 (8) From Property and Auto Physical Damage, Exhibit 1, Col (6)  
 (9) = (6) + (7) + (8)  
 (10) Based on Pinnacle's analysis of industry data  
 (11) = 50% of ULAE Ratio x Case Reserves + 100% of ULAE Ratio x IBNR Reserves

Auto Liability (AB, AD)  
Exhibit 1

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Summary of Loss Reserve Estimates  
Retained Limits

Accident Year	Selected Ultimate Loss	Incurred Loss	Paid Loss	Case Reserves	Indicated IBNR	Estimated Total Reserves
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1989	\$111,919	\$111,919	\$111,919	\$0	\$0	\$0
1990	18,683	18,683	18,683	0	0	0
1991	13,946	13,946	13,946	0	0	0
1992	39,293	39,293	39,293	0	0	0
1993	329,494	329,494	329,494	0	0	0
1994	126,181	126,181	126,181	0	0	0
1995	157,537	157,537	157,537	0	0	0
1996	75,097	75,097	75,097	0	0	0
1997	572,332	572,332	572,332	0	0	0
1998	98,687	98,687	98,687	0	0	0
1999	203,725	203,725	203,725	0	0	0
2000	81,660	81,660	81,660	0	0	0
2001	555,168	555,168	555,168	0	0	0
2002	167,747	167,747	167,747	0	0	0
2003	168,870	168,870	168,870	0	0	0
2004	49,417	49,417	49,417	0	0	0
2005	243,966	243,966	243,966	0	0	0
2006	145,431	145,431	145,431	0	0	0
2007	275,826	275,826	275,826	0	0	0
2008	136,527	136,527	136,527	0	0	0
2009	31,122	31,122	31,122	0	0	0
2010	161,512	161,512	161,512	0	0	0
2011	87,731	87,731	87,731	0	0	0
2012	38,269	38,269	38,269	0	0	0
2013	234,785	234,785	234,785	0	0	0
2014	104,340	104,340	104,340	0	0	0
2015	82,316	82,316	82,316	0	0	0
2016	145,899	145,899	145,899	0	0	0
2017	65,054	65,054	65,054	0	0	0
2018	78,866	78,866	78,866	0	0	0
2019	71,000	70,113	65,126	4,987	887	5,874
2020	73,000	69,079	69,079	0	3,921	3,921
2021	145,000	120,307	120,307	0	24,693	24,693
2022	325,000	223,624	51,820	171,804	101,376	273,180
Total	\$5,215,400	\$5,084,523	\$4,907,732	\$176,791	\$130,877	\$307,668

Notes:

- (2) From Exhibit 4, Col (11)  
(3)-(5) Provided by MVRMA  
(6) = (2) - (3)  
(7) = (5) + (6)



Auto Liability (AB, AD)  
Exhibit 2

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Ultimate Average Indications  
Retained Limits

Accident Year	Selected Ultimate Loss	Number of Vehicles	Selected Ultimate Claims	Ultimate Claims per 100 Vehicles	Ultimate Loss per Vehicle	Ultimate Loss per Claim
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1989	\$111,919	534	43	8.1	\$210	\$2,603
1990	18,683	663	33	5.0	28	566
1991	13,946	797	26	3.3	17	536
1992	39,293	870	38	4.4	45	1,034
1993	329,494	1,023	60	5.9	322	5,492
1994	126,181	1,153	72	6.2	109	1,753
1995	157,537	1,031	85	8.2	153	1,853
1996	75,097	1,131	114	10.1	66	659
1997	572,332	1,293	98	7.6	443	5,840
1998	98,687	1,379	86	6.2	72	1,148
1999	203,725	1,367	121	8.9	149	1,684
2000	81,660	1,431	104	7.3	57	785
2001	555,168	1,422	86	6.0	390	6,455
2002	167,747	1,557	80	5.1	108	2,097
2003	168,870	1,573	117	7.4	107	1,443
2004	49,417	1,745	86	4.9	28	575
2005	243,966	1,828	98	5.4	133	2,489
2006	145,431	1,812	70	3.9	80	2,078
2007	275,826	1,824	98	5.4	151	2,815
2008	136,527	1,891	76	4.0	72	1,796
2009	31,122	1,933	57	2.9	16	546
2010	161,512	1,926	78	4.0	84	2,071
2011	87,731	1,920	74	3.9	46	1,186
2012	38,269	1,939	52	2.7	20	736
2013	234,785	1,976	46	2.3	119	5,104
2014	104,340	1,924	78	4.1	54	1,338
2015	82,316	1,904	51	2.7	43	1,614
2016	145,899	1,926	76	3.9	76	1,920
2017	65,054	1,987	51	2.6	33	1,276
2018	78,866	2,010	49	2.4	39	1,610
2019	71,000	2,025	49	2.4	35	1,449
2020	73,000	2,326	37	1.6	31	1,973
2021	145,000	2,317	45	1.9	63	3,222
2022	325,000	2,260	70	3.1	144	4,643
Total	\$5,215,400	54,697	2,404	4.4	\$95	\$2,169

Notes:

- (2) From Exhibit 4, Col (11)
- (3) Provided by MVRMA
- (4) From Exhibit 15, Col (6)
- (5) = (4) / (3) x 100
- (6) = (2) / (3)
- (7) = (2) / (4)

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Comparison of Ultimate Loss to Prior Ultimate Loss  
Retained Limits

Accident Year	Selected Ultimate Loss @ 12/31/2021	Selected Ultimate Loss @ 12/31/2022	Difference	Percent Change
(1)	(2)	(3)	(4)	(5)
1989	\$111,919	\$111,919	\$0	0.0%
1990	18,683	18,683	0	0.0%
1991	13,946	13,946	0	0.0%
1992	39,293	39,293	0	0.0%
1993	329,494	329,494	0	0.0%
1994	126,181	126,181	0	0.0%
1995	157,537	157,537	0	0.0%
1996	75,097	75,097	0	0.0%
1997	572,332	572,332	0	0.0%
1998	98,687	98,687	0	0.0%
1999	203,725	203,725	0	0.0%
2000	81,660	81,660	0	0.0%
2001	555,168	555,168	0	0.0%
2002	167,747	167,747	0	0.0%
2003	168,870	168,870	0	0.0%
2004	49,417	49,417	0	0.0%
2005	243,966	243,966	0	0.0%
2006	145,431	145,431	0	0.0%
2007	275,826	275,826	0	0.0%
2008	136,527	136,527	0	0.0%
2009	31,122	31,122	0	0.0%
2010	161,512	161,512	0	0.0%
2011	87,731	87,731	0	0.0%
2012	38,269	38,269	0	0.0%
2013	234,785	234,785	0	0.0%
2014	104,340	104,340	0	0.0%
2015	82,316	82,316	0	0.0%
2016	145,899	145,899	0	0.0%
2017	65,054	65,054	0	0.0%
2018	122,000	78,866	(43,134)	-35.4%
2019	74,000	71,000	(3,000)	-4.1%
2020	113,000	73,000	(40,000)	-35.4%
2021	161,000	145,000	(16,000)	-9.9%
Total	\$4,992,534	\$4,890,400	(\$102,134)	-2.0%

Notes:

- (2) From Pinnacle's analysis of unpaid loss & LAE at 12/31/2021
- (3) From Exhibit 4, Col (11)
- (4) = (3) - (2)
- (5) = (4) / (2)

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Selected Ultimate Loss  
Retained Limits

Accident Year	Retention	Industry Development		MVRMA's Loss Development			MVRMA Expected Loss Method	MVRMA Incurred BF Method	MVRMA Paid BF Method	Selected Ultimate Loss Method
		Incurred Loss Method	Paid Loss Method	Incurred Loss Method	Paid Loss Method	Case Reserve Method				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1989	\$250,000	\$111,919	\$111,919	\$111,919	\$111,919	\$111,919	\$28,840	\$111,919	\$111,919	\$111,919
1990	250,000	18,683	18,683	18,683	18,683	18,683	36,165	18,683	18,683	18,683
1991	250,000	13,946	13,946	13,946	13,946	13,946	43,909	13,946	13,946	13,946
1992	250,000	39,293	39,293	39,293	39,293	39,293	48,410	39,293	39,293	39,293
1993	250,000	329,494	329,494	329,494	329,494	329,494	57,493	329,494	329,494	329,494
1994	250,000	126,181	126,181	126,181	126,181	126,181	65,447	126,181	126,181	126,181
1995	250,000	157,537	157,537	157,537	157,537	157,537	59,108	157,537	157,537	157,537
1996	250,000	75,097	75,097	75,097	75,097	75,097	65,489	75,097	75,097	75,097
1997	500,000	572,332	572,332	572,332	572,332	572,332	75,618	572,332	572,332	572,332
1998	500,000	98,687	98,687	98,687	98,687	98,687	81,454	98,687	98,687	98,687
1999	500,000	203,725	203,725	203,725	203,725	203,725	81,553	203,725	203,725	203,725
2000	500,000	81,660	81,660	81,660	81,660	81,660	86,224	81,660	81,660	81,660
2001	500,000	555,168	555,168	555,168	555,168	555,168	86,539	555,168	555,168	555,168
2002	500,000	167,747	167,747	167,747	167,747	167,747	95,702	167,747	167,747	167,747
2003	1,000,000	168,870	168,870	168,870	168,870	168,870	97,653	168,870	168,870	168,870
2004	1,000,000	49,418	49,418	49,417	49,417	49,417	109,414	49,417	49,417	49,417
2005	1,000,000	243,971	243,974	243,966	243,966	243,966	115,764	243,966	243,966	243,966
2006	1,000,000	145,437	145,441	145,431	145,431	145,431	115,898	145,431	145,431	145,431
2007	1,000,000	275,849	275,864	275,826	275,826	275,826	117,833	275,826	275,826	275,826
2008	1,000,000	136,549	136,564	136,527	136,527	136,527	123,382	136,527	136,527	136,527
2009	1,000,000	31,132	31,139	31,122	31,122	31,122	127,384	31,122	31,122	31,122
2010	500,000	161,616	161,687	161,512	161,512	161,512	128,192	161,512	161,512	161,512
2011	500,000	87,844	87,921	87,731	87,731	87,731	129,071	87,731	87,731	87,731
2012	500,000	38,369	38,436	38,269	38,269	38,269	131,651	38,269	38,269	38,269
2013	500,000	236,005	236,836	234,785	234,785	234,785	135,505	234,785	234,785	234,785
2014	500,000	104,966	105,557	104,340	104,340	104,340	133,259	104,340	104,340	104,340
2015	500,000	82,975	83,725	82,316	82,316	82,316	133,192	82,316	82,316	82,316
2016	500,000	147,568	149,956	145,899	146,629	145,899	136,078	145,899	146,576	145,899
2017	500,000	66,344	68,433	65,054	65,837	65,054	141,792	65,054	66,740	65,054
2018	500,000	81,789	87,402	78,866	80,373	78,866	144,868	78,866	81,583	78,866
2019	500,000	75,947	81,557	70,674	68,030	71,252	147,408	71,283	71,419	71,000
2020	500,000	82,273	109,433	72,765	77,572	69,079	171,013	77,742	87,802	73,000
2021	500,000	170,667	285,879	158,408	168,872	120,307	172,054	161,690	169,787	145,000
2022	500,000	461,573	289,373	362,168	123,656	554,898	169,500	288,465	150,288	325,000
Total		\$5,400,631	\$5,388,935	\$5,265,415	\$5,042,551	\$5,416,936	\$3,592,865	\$5,200,580	\$5,085,778	\$5,215,400

Notes:

- |     |                            |      |                          |
|-----|----------------------------|------|--------------------------|
| (2) | Provided by MVRMA          | (7)  | From Exhibit 10, Col (8) |
| (3) | From Exhibit 11.1, Col (4) | (8)  | From Exhibit 5, Col (4)  |
| (4) | From Exhibit 11.2, Col (4) | (9)  | From Exhibit 5, Col (8)  |
| (5) | From Exhibit 8, Col (4)    | (10) | From Exhibit 6, Col (8)  |
| (6) | From Exhibit 9, Col (4)    |      |                          |

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Ultimate Loss Based on Bornhuetter-Ferguson Method Using Incurred Loss  
Retained Limits

Accident Year	Number of Vehicles	Selected Loss Cost	Expected Loss	Percent Undeveloped	Undeveloped Loss	Cumulative Incurred Loss	Projected Ultimate Loss	Indicated Loss Cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1989	534	\$54	\$28,840	0.0%	\$0	\$111,919	\$111,919	\$210
1990	663	55	36,165	0.0%	0	18,683	18,683	28
1991	797	55	43,909	0.0%	0	13,946	13,946	17
1992	870	56	48,410	0.0%	0	39,293	39,293	45
1993	1,023	56	57,493	0.0%	0	329,494	329,494	322
1994	1,153	57	65,447	0.0%	0	126,181	126,181	109
1995	1,031	57	59,108	0.0%	0	157,537	157,537	153
1996	1,131	58	65,489	0.0%	0	75,097	75,097	66
1997	1,293	58	75,618	0.0%	0	572,332	572,332	443
1998	1,379	59	81,454	0.0%	0	98,687	98,687	72
1999	1,367	60	81,553	0.0%	0	203,725	203,725	149
2000	1,431	60	86,224	0.0%	0	81,660	81,660	57
2001	1,422	61	86,539	0.0%	0	555,168	555,168	390
2002	1,557	61	95,702	0.0%	0	167,747	167,747	108
2003	1,573	62	97,653	0.0%	0	168,870	168,870	107
2004	1,745	63	109,414	0.0%	0	49,417	49,417	28
2005	1,828	63	115,764	0.0%	0	243,966	243,966	133
2006	1,812	64	115,898	0.0%	0	145,431	145,431	80
2007	1,824	65	117,833	0.0%	0	275,826	275,826	151
2008	1,891	65	123,382	0.0%	0	136,527	136,527	72
2009	1,933	66	127,384	0.0%	0	31,122	31,122	16
2010	1,926	67	128,192	0.0%	0	161,512	161,512	84
2011	1,920	67	129,071	0.0%	0	87,731	87,731	46
2012	1,939	68	131,651	0.0%	0	38,269	38,269	20
2013	1,976	69	135,505	0.0%	0	234,785	234,785	119
2014	1,924	69	133,259	0.0%	0	104,340	104,340	54
2015	1,904	70	133,192	0.0%	0	82,316	82,316	43
2016	1,926	71	136,078	0.0%	0	145,899	145,899	76
2017	1,987	71	141,792	0.0%	0	65,054	65,054	33
2018	2,010	72	144,868	0.0%	0	78,866	78,866	39
2019	2,025	73	147,408	0.8%	1,170	70,113	71,283	35
2020	2,326	74	171,013	5.1%	8,663	69,079	77,742	33
2021	2,317	74	172,054	24.1%	41,383	120,307	161,690	70
2022	2,260	75	169,500	38.3%	64,841	223,624	288,465	128
Total	54,697		\$3,592,865		\$116,057	\$5,084,523	\$5,200,580	\$95

Notes:

- (2) Provided by MVRMA
- (3) From Exhibit 7.1, Col (8)
- (4) = (2) x (3)
- (5) Based on Exhibit 12
- (6) = (4) x (5)
- (7) Provided by MVRMA
- (8) = (6) + (7)
- (9) = (8) / (2)

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Ultimate Loss Based on Bornhuetter-Ferguson Method Using Paid Loss  
Retained Limits

Accident Year	Number of Vehicles	Selected Loss Cost	Expected Loss	Percent Undeveloped	Undeveloped Loss	Cumulative Paid Loss	Projected Ultimate Loss	Indicated Loss Cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1989	534	\$54	\$28,840	0.0%	\$0	\$111,919	\$111,919	\$210
1990	663	55	36,165	0.0%	0	18,683	18,683	28
1991	797	55	43,909	0.0%	0	13,946	13,946	17
1992	870	56	48,410	0.0%	0	39,293	39,293	45
1993	1,023	56	57,493	0.0%	0	329,494	329,494	322
1994	1,153	57	65,447	0.0%	0	126,181	126,181	109
1995	1,031	57	59,108	0.0%	0	157,537	157,537	153
1996	1,131	58	65,489	0.0%	0	75,097	75,097	66
1997	1,293	58	75,618	0.0%	0	572,332	572,332	443
1998	1,379	59	81,454	0.0%	0	98,687	98,687	72
1999	1,367	60	81,553	0.0%	0	203,725	203,725	149
2000	1,431	60	86,224	0.0%	0	81,660	81,660	57
2001	1,422	61	86,539	0.0%	0	555,168	555,168	390
2002	1,557	61	95,702	0.0%	0	167,747	167,747	108
2003	1,573	62	97,653	0.0%	0	168,870	168,870	107
2004	1,745	63	109,414	0.0%	0	49,417	49,417	28
2005	1,828	63	115,764	0.0%	0	243,966	243,966	133
2006	1,812	64	115,898	0.0%	0	145,431	145,431	80
2007	1,824	65	117,833	0.0%	0	275,826	275,826	151
2008	1,891	65	123,382	0.0%	0	136,527	136,527	72
2009	1,933	66	127,384	0.0%	0	31,122	31,122	16
2010	1,926	67	128,192	0.0%	0	161,512	161,512	84
2011	1,920	67	129,071	0.0%	0	87,731	87,731	46
2012	1,939	68	131,651	0.0%	0	38,269	38,269	20
2013	1,976	69	135,505	0.0%	0	234,785	234,785	119
2014	1,924	69	133,259	0.0%	0	104,340	104,340	54
2015	1,904	70	133,192	0.0%	0	82,316	82,316	43
2016	1,926	71	136,078	0.5%	677	145,899	146,576	76
2017	1,987	71	141,792	1.2%	1,686	65,054	66,740	34
2018	2,010	72	144,868	1.9%	2,718	78,866	81,583	41
2019	2,025	73	147,408	4.3%	6,293	65,126	71,419	35
2020	2,326	74	171,013	10.9%	18,723	69,079	87,802	38
2021	2,317	74	172,054	28.8%	49,480	120,307	169,787	73
2022	2,260	75	169,500	58.1%	98,468	51,820	150,288	66
Total	54,697		\$3,592,865		\$178,046	\$4,907,732	\$5,085,778	\$93

Notes:

- (2) Provided by MVRMA
- (3) From Exhibit 7.1, Col (8)
- (4) = (2) x (3)
- (5) Based on Exhibit 12
- (6) = (4) x (5)
- (7) Provided by MVRMA
- (8) = (6) + (7)
- (9) = (8) / (2)

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Initial Expected Loss Cost  
Retained Limits

Accident Year	Number of Vehicles	Initial Ultimate Loss	Indicated Loss Cost	Limits Factor to \$500K	Trend Factor to 2022	Trended \$500K Limits Loss Cost	Expected Loss Cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1989	534	\$111,919	\$210	1.000	1.389	\$291	\$54
1990	663	18,683	28	1.000	1.375	39	55
1991	797	13,946	17	1.000	1.361	24	55
1992	870	39,293	45	1.000	1.348	61	56
1993	1,023	329,494	322	1.000	1.335	430	56
1994	1,153	126,181	109	1.000	1.321	145	57
1995	1,031	157,537	153	1.000	1.308	200	57
1996	1,131	75,097	66	1.000	1.295	86	58
1997	1,293	572,332	443	1.000	1.282	568	58
1998	1,379	98,687	72	1.000	1.270	91	59
1999	1,367	203,725	149	1.000	1.257	187	60
2000	1,431	81,660	57	1.000	1.245	71	60
2001	1,422	555,168	390	1.000	1.232	481	61
2002	1,557	167,747	108	1.000	1.220	131	61
2003	1,573	168,870	107	1.000	1.208	130	62
2004	1,745	49,417	28	1.000	1.196	34	63
2005	1,828	243,966	133	1.000	1.184	158	63
2006	1,812	145,431	80	1.000	1.173	94	64
2007	1,824	275,826	151	1.000	1.161	176	65
2008	1,891	136,527	72	1.000	1.149	83	65
2009	1,933	31,122	16	1.000	1.138	18	66
2010	1,926	161,512	84	1.000	1.127	94	67
2011	1,920	87,731	46	1.000	1.116	51	67
2012	1,939	38,269	20	1.000	1.105	22	68
2013	1,976	234,785	119	1.000	1.094	130	69
2014	1,924	104,340	54	1.000	1.083	59	69
2015	1,904	82,316	43	1.000	1.072	46	70
2016	1,926	145,899	76	1.000	1.062	80	71
2017	1,987	65,054	33	1.000	1.051	34	71
2018	2,010	78,866	39	1.000	1.041	41	72
2019	2,025	70,674	35	1.000	1.030	36	73
2020	2,326	72,765	31	1.000	1.020	32	74
2021	2,317	158,408	68	1.000	1.010	69	74
2022	2,260	362,168	160	1.000	1.000	160	75
Total	54,697	\$5,265,415	\$96				
					Weighted Average Ex. Hi/Lo	\$107	
					10-Year Weighted Avg	69	
					10-Year Weighted Avg Ex. Hi/Lo	62	
					5-Year Weighted Avg	69	
					Selected 2022 Loss Cost	\$75	

Notes:

- (2) Provided by MVRMA
- (3) From Exhibit 7.2, Col (5)
- (4) = (3) / (2)
- (5) From Exhibit 7.3, Col (7)
- (6) Based on selected trend of 1.0%
- (7) = (4) x (5) x (6)
- (8) = Selected Loss Cost / [(6) x (5)]

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Initial Selected Ultimate Loss  
Retained Limits

Accident Year	Projected Ultimate Loss Based on			Initial Ultimate Loss
	Incurred	Paid	Case	
(1)	(2)	(3)	(4)	(5)
1989	\$111,919	\$111,919	\$111,919	\$111,919
1990	18,683	18,683	18,683	18,683
1991	13,946	13,946	13,946	13,946
1992	39,293	39,293	39,293	39,293
1993	329,494	329,494	329,494	329,494
1994	126,181	126,181	126,181	126,181
1995	157,537	157,537	157,537	157,537
1996	75,097	75,097	75,097	75,097
1997	572,332	572,332	572,332	572,332
1998	98,687	98,687	98,687	98,687
1999	203,725	203,725	203,725	203,725
2000	81,660	81,660	81,660	81,660
2001	555,168	555,168	555,168	555,168
2002	167,747	167,747	167,747	167,747
2003	168,870	168,870	168,870	168,870
2004	49,417	49,417	49,417	49,417
2005	243,966	243,966	243,966	243,966
2006	145,431	145,431	145,431	145,431
2007	275,826	275,826	275,826	275,826
2008	136,527	136,527	136,527	136,527
2009	31,122	31,122	31,122	31,122
2010	161,512	161,512	161,512	161,512
2011	87,731	87,731	87,731	87,731
2012	38,269	38,269	38,269	38,269
2013	234,785	234,785	234,785	234,785
2014	104,340	104,340	104,340	104,340
2015	82,316	82,316	82,316	82,316
2016	145,899	146,629	145,899	145,899
2017	65,054	65,837	65,054	65,054
2018	78,866	80,373	78,866	78,866
2019	70,674	68,030	71,252	70,674
2020	72,765	77,572	69,079	72,765
2021	158,408	168,872	120,307	158,408
2022	362,168	123,656	554,898	362,168
Total	\$5,265,415	\$5,042,551	\$5,416,936	\$5,265,415

## Notes:

- (2) From Exhibit 8, Col (4)
- (3) From Exhibit 9, Col (4)
- (4) From Exhibit 10, Col (8)

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Estimated Limits Factor

Accident Year	Retention	Incurred Losses at		Incurred Limits Factors	Industry Limits Factors	Selected Limits Factors
		\$500K Limits	Retention Limits			
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1989	\$250,000	\$111,919	\$111,919	1.000		1.000
1990	250,000	18,683	18,683	1.000		1.000
1991	250,000	13,946	13,946	1.000		1.000
1992	250,000	39,293	39,293	1.000		1.000
1993	250,000	329,494	329,494	1.000		1.000
1994	250,000	126,181	126,181	1.000		1.000
1995	250,000	157,537	157,537	1.000		1.000
1996	250,000	75,097	75,097	1.000		1.000
1997	500,000	572,332	572,332	1.000	1.000	1.000
1998	500,000	98,687	98,687	1.000	1.000	1.000
1999	500,000	203,725	203,725	1.000	1.000	1.000
2000	500,000	81,660	81,660	1.000	1.000	1.000
2001	500,000	555,168	555,168	1.000	1.000	1.000
2002	500,000	167,747	167,747	1.000	1.000	1.000
2003	1,000,000	168,870	168,870	1.000	0.899	1.000
2004	1,000,000	49,417	49,417	1.000	0.896	1.000
2005	1,000,000	243,966	243,966	1.000	0.894	1.000
2006	1,000,000	145,431	145,431	1.000	0.891	1.000
2007	1,000,000	275,826	275,826	1.000	0.889	1.000
2008	1,000,000	136,527	136,527	1.000	0.886	1.000
2009	1,000,000	31,122	31,122	1.000	0.884	1.000
2010	500,000	161,512	161,512	1.000	1.000	1.000
2011	500,000	87,731	87,731	1.000	1.000	1.000
2012	500,000	38,269	38,269	1.000	1.000	1.000
2013	500,000	234,785	234,785	1.000	1.000	1.000
2014	500,000	104,340	104,340	1.000	1.000	1.000
2015	500,000	82,316	82,316	1.000	1.000	1.000
2016	500,000	145,899	145,899	1.000	1.000	1.000
2017	500,000	65,054	65,054	1.000	1.000	1.000
2018	500,000	78,866	78,866	1.000	1.000	1.000
2019	500,000	70,113	70,113	1.000	1.000	1.000
2020	500,000	69,079	69,079	1.000	1.000	1.000
2021	500,000	120,307	120,307	1.000	1.000	1.000
2022	500,000	223,624	223,624	1.000	1.000	1.000
Total		\$5,084,523	\$5,084,523			

Notes:

- (2)-(4) Provided by MVRMA  
(5) = (3) / (4)  
(6) Based on insurance industry development



Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Ultimate Loss Based on Incurred Loss Development Method  
Retained Limits

Accident Year (1)	Cumulative Incurred Loss (2)	Loss Development Factors (3)	Projected Ultimate Loss (4)
1989	\$111,919	1.000	\$111,919
1990	18,683	1.000	18,683
1991	13,946	1.000	13,946
1992	39,293	1.000	39,293
1993	329,494	1.000	329,494
1994	126,181	1.000	126,181
1995	157,537	1.000	157,537
1996	75,097	1.000	75,097
1997	572,332	1.000	572,332
1998	98,687	1.000	98,687
1999	203,725	1.000	203,725
2000	81,660	1.000	81,660
2001	555,168	1.000	555,168
2002	167,747	1.000	167,747
2003	168,870	1.000	168,870
2004	49,417	1.000	49,417
2005	243,966	1.000	243,966
2006	145,431	1.000	145,431
2007	275,826	1.000	275,826
2008	136,527	1.000	136,527
2009	31,122	1.000	31,122
2010	161,512	1.000	161,512
2011	87,731	1.000	87,731
2012	38,269	1.000	38,269
2013	234,785	1.000	234,785
2014	104,340	1.000	104,340
2015	82,316	1.000	82,316
2016	145,899	1.000	145,899
2017	65,054	1.000	65,054
2018	78,866	1.000	78,866
2019	70,113	1.008	70,674
2020	69,079	1.053	72,765
2021	120,307	1.317	158,408
2022	223,624	1.620	362,168
Total	\$5,084,523		\$5,265,415

Notes:

- (2) Provided by MVRMA
- (3) Based on Exhibit 12
- (4) = (2) x (3)

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Ultimate Loss Based on Paid Loss Development Method  
Retained Limits

Accident Year (1)	Cumulative Paid Loss (2)	Loss Development Factors (3)	Projected Ultimate Loss (4)
1989	\$111,919	1.000	\$111,919
1990	18,683	1.000	18,683
1991	13,946	1.000	13,946
1992	39,293	1.000	39,293
1993	329,494	1.000	329,494
1994	126,181	1.000	126,181
1995	157,537	1.000	157,537
1996	75,097	1.000	75,097
1997	572,332	1.000	572,332
1998	98,687	1.000	98,687
1999	203,725	1.000	203,725
2000	81,660	1.000	81,660
2001	555,168	1.000	555,168
2002	167,747	1.000	167,747
2003	168,870	1.000	168,870
2004	49,417	1.000	49,417
2005	243,966	1.000	243,966
2006	145,431	1.000	145,431
2007	275,826	1.000	275,826
2008	136,527	1.000	136,527
2009	31,122	1.000	31,122
2010	161,512	1.000	161,512
2011	87,731	1.000	87,731
2012	38,269	1.000	38,269
2013	234,785	1.000	234,785
2014	104,340	1.000	104,340
2015	82,316	1.000	82,316
2016	145,899	1.005	146,629
2017	65,054	1.012	65,837
2018	78,866	1.019	80,373
2019	65,126	1.045	68,030
2020	69,079	1.123	77,572
2021	120,307	1.404	168,872
2022	51,820	2.386	123,656
Total	\$4,907,732		\$5,042,551

Notes:

- (2) Provided by MVRMA
- (3) Based on Exhibit 12
- (4) = (2) x (3)

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Ultimate Loss Based on Case Reserve Development Method  
Retained Limits

Accident Year	Retention	Cumulative Paid Loss	Case Reserves	Loss Development Factors			Projected Ultimate Loss
				Incurred	Paid	Reserve	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1989	\$250,000	\$111,919	\$0	100.0%	100.0%	100.0%	\$111,919
1990	250,000	18,683	0	100.0%	100.0%	100.0%	18,683
1991	250,000	13,946	0	100.0%	100.0%	100.0%	13,946
1992	250,000	39,293	0	100.0%	100.0%	100.0%	39,293
1993	250,000	329,494	0	100.0%	100.0%	100.0%	329,494
1994	250,000	126,181	0	100.0%	100.0%	100.0%	126,181
1995	250,000	157,537	0	100.0%	100.0%	100.0%	157,537
1996	250,000	75,097	0	100.0%	100.0%	100.0%	75,097
1997	500,000	572,332	0	100.0%	100.0%	100.0%	572,332
1998	500,000	98,687	0	100.0%	100.0%	100.0%	98,687
1999	500,000	203,725	0	100.0%	100.0%	100.0%	203,725
2000	500,000	81,660	0	100.0%	100.0%	100.0%	81,660
2001	500,000	555,168	0	100.0%	100.0%	100.0%	555,168
2002	500,000	167,747	0	100.0%	100.0%	100.0%	167,747
2003	1,000,000	168,870	0	100.0%	100.0%	100.0%	168,870
2004	1,000,000	49,417	0	100.0%	100.0%	100.0%	49,417
2005	1,000,000	243,966	0	100.0%	100.0%	100.0%	243,966
2006	1,000,000	145,431	0	100.0%	100.0%	100.0%	145,431
2007	1,000,000	275,826	0	100.0%	100.0%	100.0%	275,826
2008	1,000,000	136,527	0	100.0%	100.0%	100.0%	136,527
2009	1,000,000	31,122	0	100.0%	100.0%	100.0%	31,122
2010	500,000	161,512	0	100.0%	100.0%	100.0%	161,512
2011	500,000	87,731	0	100.0%	100.0%	100.0%	87,731
2012	500,000	38,269	0	100.0%	100.0%	100.0%	38,269
2013	500,000	234,785	0	100.0%	100.0%	100.0%	234,785
2014	500,000	104,340	0	100.0%	100.0%	100.0%	104,340
2015	500,000	82,316	0	100.0%	100.0%	100.0%	82,316
2016	500,000	145,899	0	100.0%	99.5%	100.0%	145,899
2017	500,000	65,054	0	100.0%	98.8%	100.0%	65,054
2018	500,000	78,866	0	100.0%	98.1%	100.0%	78,866
2019	500,000	65,126	4,987	99.2%	95.7%	81.4%	71,252
2020	500,000	69,079	0	94.9%	89.1%	53.7%	69,079
2021	500,000	120,307	0	75.9%	71.2%	16.4%	120,307
2022	500,000	51,820	171,804	61.7%	41.9%	34.2%	554,898
Total		\$4,907,732	\$176,791				\$5,416,936

Notes:

- (2)-(4) Provided by MVRMA  
(5)-(6) Based on Exhibit 12  
(7) = [(5) - (6)] / [(1.0 - (6))]  
(8) = (3) + [(4) / (7)]

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Ultimate Loss Based on Incurred Loss Development Method Using Industry Factors  
Retained Limits

Accident Year	Cumulative Incurred Loss	Industry Loss Development Factors	Projected Ultimate Loss
(1)	(2)	(3)	(4)
1989	\$111,919	1.000	\$111,919
1990	18,683	1.000	18,683
1991	13,946	1.000	13,946
1992	39,293	1.000	39,293
1993	329,494	1.000	329,494
1994	126,181	1.000	126,181
1995	157,537	1.000	157,537
1996	75,097	1.000	75,097
1997	572,332	1.000	572,332
1998	98,687	1.000	98,687
1999	203,725	1.000	203,725
2000	81,660	1.000	81,660
2001	555,168	1.000	555,168
2002	167,747	1.000	167,747
2003	168,870	1.000	168,870
2004	49,417	1.000	49,418
2005	243,966	1.000	243,971
2006	145,431	1.000	145,437
2007	275,826	1.000	275,849
2008	136,527	1.000	136,549
2009	31,122	1.000	31,132
2010	161,512	1.001	161,616
2011	87,731	1.001	87,844
2012	38,269	1.003	38,369
2013	234,785	1.005	236,005
2014	104,340	1.006	104,966
2015	82,316	1.008	82,975
2016	145,899	1.011	147,568
2017	65,054	1.020	66,344
2018	78,866	1.037	81,789
2019	70,113	1.083	75,947
2020	69,079	1.191	82,273
2021	120,307	1.419	170,667
2022	223,624	2.064	461,573
Total	\$5,084,523		\$5,400,631

Notes:

- (2) Provided by MVRMA
- (3) Based on insurance industry development
- (4) = (2) x (3)

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Ultimate Loss Based on Paid Loss Development Method Using Industry Factors  
Retained Limits

Accident Year	Cumulative Paid Loss	Industry Loss Development Factors	Projected Ultimate Loss
(1)	(2)	(3)	(4)
1989	\$111,919	1.000	\$111,919
1990	18,683	1.000	18,683
1991	13,946	1.000	13,946
1992	39,293	1.000	39,293
1993	329,494	1.000	329,494
1994	126,181	1.000	126,181
1995	157,537	1.000	157,537
1996	75,097	1.000	75,097
1997	572,332	1.000	572,332
1998	98,687	1.000	98,687
1999	203,725	1.000	203,725
2000	81,660	1.000	81,660
2001	555,168	1.000	555,168
2002	167,747	1.000	167,747
2003	168,870	1.000	168,870
2004	49,417	1.000	49,418
2005	243,966	1.000	243,974
2006	145,431	1.000	145,441
2007	275,826	1.000	275,864
2008	136,527	1.000	136,564
2009	31,122	1.001	31,139
2010	161,512	1.001	161,687
2011	87,731	1.002	87,921
2012	38,269	1.004	38,436
2013	234,785	1.009	236,836
2014	104,340	1.012	105,557
2015	82,316	1.017	83,725
2016	145,899	1.028	149,956
2017	65,054	1.052	68,433
2018	78,866	1.108	87,402
2019	65,126	1.252	81,557
2020	69,079	1.584	109,433
2021	120,307	2.376	285,879
2022	51,820	5.584	289,373
Total	\$4,907,732		\$5,388,935

Notes:

- (2) Provided by MVRMA
- (3) Based on insurance industry development
- (4) = (2) x (3)

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Loss Development Patterns

Month of Development (1)	\$500K Limits % Developed		\$1M Limits % Developed		Industry % Developed	
	Incurred (2)	Paid (3)	Incurred (4)	Paid (5)	Incurred (6)	Paid (7)
408	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
396	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
384	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
372	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
360	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
348	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
336	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
324	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
312	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
300	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
288	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
276	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
264	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
252	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
240	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
228	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
216	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
204	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
192	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
180	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
168	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%
156	100.0%	100.0%	100.0%	100.0%	99.9%	99.9%
144	100.0%	100.0%	100.0%	100.0%	99.9%	99.8%
132	100.0%	100.0%	100.0%	100.0%	99.7%	99.6%
120	100.0%	100.0%	100.0%	100.0%	99.5%	99.1%
108	100.0%	100.0%	100.0%	100.0%	99.4%	98.8%
96	100.0%	100.0%	100.0%	100.0%	99.2%	98.3%
84	100.0%	99.5%	100.0%	99.2%	98.9%	97.3%
72	100.0%	98.8%	100.0%	98.5%	98.1%	95.1%
60	100.0%	98.1%	100.0%	97.2%	96.4%	90.2%
48	99.2%	95.7%	98.1%	93.3%	92.3%	79.9%
36	94.9%	89.1%	89.4%	82.7%	84.0%	63.1%
24	75.9%	71.2%	70.5%	59.8%	70.5%	42.1%
12	61.7%	41.9%	45.2%	17.4%	48.4%	17.9%

Notes:

- (2) Based on Exhibit 13
- (3) Based on Exhibit 14
- (4) = Col (2) lagged 6 months
- (5) = Col (3) lagged 6 months
- (6)-(7) Based on insurance industry development

MVRMA Combined Analyses 2022-12-31  
3/30/2023 at 2:58 PM

Incurred Loss at \$500K SIR

[illegible]



Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Paid Loss at \$500K SIR

Accident Year	Maturity (Age in Months)														
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180
1989	8,614	8,614	111,919	111,919	111,919	111,919	111,919	111,919	111,919	111,919	111,919	111,919	111,919	111,919	111,919
1990	8,126	18,683	18,683	18,683	18,683	18,683	18,683	18,683	18,683	18,683	18,683	18,683	18,683	18,683	18,683
1991	8,719	8,874	12,838	13,946	13,946	13,946	13,946	13,946	13,946	13,946	13,946	13,946	13,946	13,946	13,946
1992	14,941	16,632	21,357	25,418	25,418	39,293	39,293	39,293	39,293	39,293	39,293	39,293	39,293	39,293	39,293
1993	23,877	53,454	78,551	324,172	329,494	329,494	329,494	329,494	329,494	329,494	329,494	329,494	329,494	329,494	329,494
1994	27,039	43,451	125,930	126,992	126,181	126,181	126,181	126,181	126,181	126,181	126,181	126,181	126,181	126,181	126,181
1995	38,520	60,033	134,606	157,537	157,537	157,537	157,537	157,537	157,537	157,537	157,537	157,537	157,537	157,537	157,537
1996	44,173	53,678	72,802	74,641	74,641	74,641	74,641	75,097	75,097	75,097	75,097	75,097	75,097	75,097	75,097
1997	34,298	68,453	565,604	572,332	572,332	572,332	572,332	572,332	572,332	572,332	572,332	572,332	572,332	572,332	572,332
1998	42,307	55,723	68,250	98,687	98,687	98,687	98,687	98,687	98,687	98,687	98,687	98,687	98,687	98,687	98,687
1999	40,519	134,607	152,208	176,501	203,725	203,725	203,725	203,725	203,725	203,725	203,725	203,725	203,725	203,725	203,725
2000	52,991	72,765	74,962	81,660	81,660	81,660	81,660	81,660	81,660	81,660	81,660	81,660	81,660	81,660	81,660
2001	32,751	422,055	466,966	483,944	527,259	534,626	534,626	555,168	555,168	555,168	555,168	555,168	555,168	555,168	555,168
2002	34,887	101,869	167,747	167,747	167,747	167,747	167,747	167,747	167,747	167,747	167,747	167,747	167,747	167,747	167,747
2003	64,611	82,622	114,099	168,870	168,870	168,870	168,870	168,870	168,870	168,870	168,870	168,870	168,870	168,870	168,870
2004	41,711	49,417	49,417	49,417	49,417	49,417	49,417	49,417	49,417	49,417	49,417	49,417	49,417	49,417	49,417
2005	43,005	143,482	153,587	170,181	186,079	215,596	243,966	243,966	243,966	243,966	243,966	243,966	243,966	243,966	243,966
2006	46,100	75,431	145,431	145,431	145,431	145,431	145,431	145,431	145,431	145,431	145,431	145,431	145,431	145,431	145,431
2007	72,271	151,506	250,574	275,715	275,826	275,826	275,826	275,826	275,826	275,826	275,826	275,826	275,826	275,826	275,826
2008	56,070	79,446	96,111	136,527	136,527	136,527	136,527	136,527	136,527	136,527	136,527	136,527	136,527	136,527	136,527
2009	30,372	31,122	31,122	31,122	31,122	31,122	31,122	31,122	31,122	31,122	31,122	31,122	31,122	31,122	31,122
2010	67,993	127,233	161,512	161,512	161,512	161,512	161,512	161,512	161,512	161,512	161,512	161,512	161,512	161,512	161,512
2011	65,650	77,534	87,731	87,731	87,731	87,731	87,731	87,731	87,731	87,731	87,731	87,731	87,731	87,731	87,731
2012	22,340	38,269	38,269	38,269	38,269	38,269	38,269	38,269	38,269	38,269	38,269	38,269	38,269	38,269	38,269
2013	71,513	83,494	234,785	234,785	234,785	234,785	234,785	234,785	234,785	234,785	234,785	234,785	234,785	234,785	234,785
2014	77,184	82,740	104,340	104,340	104,340	104,340	104,340	104,340	104,340	104,340	104,340	104,340	104,340	104,340	104,340
2015	48,868	76,478	76,478	82,316	82,316	82,316	82,316	82,316	82,316	82,316	82,316	82,316	82,316	82,316	82,316
2016	50,913	115,081	135,625	145,899	145,899	145,899	145,899	145,899	145,899	145,899	145,899	145,899	145,899	145,899	145,899
2017	35,035	65,054	65,054	65,054	65,054	65,054	65,054	65,054	65,054	65,054	65,054	65,054	65,054	65,054	65,054
2018	25,849	43,483	53,612	74,085	78,866	78,866	78,866	78,866	78,866	78,866	78,866	78,866	78,866	78,866	78,866
2019	39,969	55,009	65,126	65,126	65,126	65,126	65,126	65,126	65,126	65,126	65,126	65,126	65,126	65,126	65,126
2020	22,459	67,998	69,079	69,079	69,079	69,079	69,079	69,079	69,079	69,079	69,079	69,079	69,079	69,079	69,079
2021	84,660	120,307	120,307	120,307	120,307	120,307	120,307	120,307	120,307	120,307	120,307	120,307	120,307	120,307	120,307
2022	51,820	51,820	51,820	51,820	51,820	51,820	51,820	51,820	51,820	51,820	51,820	51,820	51,820	51,820	51,820

Accident	Age-to-Age Factors														
Year	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192
1989	1.000	12.993	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1990	2.299	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1991	1.018	1.447	1.086	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1992	1.113	1.284	1.190	1.000	1.546	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1993	2.239	1.470	4.127	1.016	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1994	1.607	2.898	1.008	0.994	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1995	1.558	2.242	1.170	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1996	1.215	1.356	1.025	1.000	1.000	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1997	1.996	8.263	1.012	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1998	1.317	1.225	1.446	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1999	3.322	1.131	1.160	1.154	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2000	1.373	1.030	1.089	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2001	12.887	1.106	1.036	1.090	1.014	1.000	1.038	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2002	2.920	1.647	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2003	1.279	1.381	1.480	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2004	1.185	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2005	3.336	1.070	1.108	1.093	1.159	1.132	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2006	1.636	1.928	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2007	2.096	1.654	1.100	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2008	1.417	1.210	1.421	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2009	1.025	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2010	1.871	1.269	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2011	1.181	1.132	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2012	1.713	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2013	1.168	2.812	1.000	1.037	0.964	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2014	1.072	1.261	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2015	1.565	1.000	1.076	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2016	2.260	1.179	1.076	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2017	1.857	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2018	1.682	1.233	1.382	1.065	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2019	1.376	1.184	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2020	3.028	1.016	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2021	1.421	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
All Yr Vol	1.948	1.562	1.136	1.024	1.009	1.006	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10 Yr Vol Ex. H/L	1.686	1.537	1.077	1.019	1.009	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10 Yr Vol	1.562	1.319	1.036	1.013	0.992	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0 Yr Vol Ex. H/L	1.575	1.132	1.018	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5 Yr Vol	1.692	1.121	1.092	1.010	0.986	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5 Yr Vol Ex. H/L	1.572	1.133	1.058	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
3 Yr Vol	1.654	1.128	1.111	1.017	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Prior	1.700	1.340	1.080	1.014	1.007	1.007	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	1.700	1.250	1.075	1.025	1.007	1.007	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
LDFs	2.386	1.404	1.123	1.045	1.019	1.012	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
% Paid	41.9%	71.2%	89.1%	95.7%	98.1%	98.8%	99.5%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

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Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Summary of Claim Counts

Accident Year	Closed Claims	Open Claims	Reported Claims	Indicated IBNR Claims	Selected Ultimate Claims
(1)	(2)	(3)	(4)	(5)	(6)
1989	43	0	43	0	43
1990	33	0	33	0	33
1991	26	0	26	0	26
1992	38	0	38	0	38
1993	60	0	60	0	60
1994	72	0	72	0	72
1995	85	0	85	0	85
1996	114	0	114	0	114
1997	98	0	98	0	98
1998	86	0	86	0	86
1999	121	0	121	0	121
2000	104	0	104	0	104
2001	86	0	86	0	86
2002	80	0	80	0	80
2003	117	0	117	0	117
2004	86	0	86	0	86
2005	98	0	98	0	98
2006	70	0	70	0	70
2007	98	0	98	0	98
2008	76	0	76	0	76
2009	57	0	57	0	57
2010	78	0	78	0	78
2011	74	0	74	0	74
2012	52	0	52	0	52
2013	46	0	46	0	46
2014	78	0	78	0	78
2015	51	0	51	0	51
2016	76	0	76	0	76
2017	51	0	51	0	51
2018	49	0	49	0	49
2019	48	1	49	0	49
2020	37	0	37	0	37
2021	45	0	45	0	45
2022	57	9	66	4	70
Total	2,390	10	2,400	4	2,404

## Notes:

(2)-(4) Provided by MVRMA

(5) = (6) - (4)

(6) From Exhibit 16, Col (4)

Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Ultimate Claims Based on Reported Claim Development Method

Accident Year	Cumulative Reported Claims	Claim Development Factors	Projected Ultimate Claims
(1)	(2)	(3)	(4)
1989	43	1.000	43
1990	33	1.000	33
1991	26	1.000	26
1992	38	1.000	38
1993	60	1.000	60
1994	72	1.000	72
1995	85	1.000	85
1996	114	1.000	114
1997	98	1.000	98
1998	86	1.000	86
1999	121	1.000	121
2000	104	1.000	104
2001	86	1.000	86
2002	80	1.000	80
2003	117	1.000	117
2004	86	1.000	86
2005	98	1.000	98
2006	70	1.000	70
2007	98	1.000	98
2008	76	1.000	76
2009	57	1.000	57
2010	78	1.000	78
2011	74	1.000	74
2012	52	1.000	52
2013	46	1.000	46
2014	78	1.000	78
2015	51	1.000	51
2016	76	1.000	76
2017	51	1.000	51
2018	49	1.000	49
2019	49	1.000	49
2020	37	1.000	37
2021	45	1.007	45
2022	66	1.057	70
Total	2,400		2,404

## Notes:

(2) Provided by MVRMA

(3) From Exhibit 17

(4) = (2) x (3)

[illegible][illegible]

MVRMA Combined Analyses 2022-12-31  
3/30/2023 at 2:58 PM

Auto Liability (AB, AD)  
December 31, 2022

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Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Closed Claim Counts

Year	Maturity (Age in Months)														
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180
1989	41	42	43	43	43	43	43	43	43	43	43	43	43	43	43
1990	27	33	33	33	33	33	33	33	33	33	33	33	33	33	33
1991	21	24	24	26	26	26	26	26	26	26	26	26	26	26	26
1992	30	35	35	37	36	38	38	38	38	38	38	38	38	38	38
1993	37	53	56	59	60	60	60	60	60	60	60	60	60	60	60
1994	52	65	72	72	72	72	72	72	72	72	72	72	72	72	72
1995	48	72	82	85	85	85	85	85	85	85	85	85	85	85	85
1996	88	107	109	110	110	111	111	111	114	114	114	114	114	114	114
1997	83	93	94	97	97	97	98	98	98	98	98	98	98	98	98
1998	69	81	84	86	86	86	86	86	86	86	86	86	86	86	86
1999	105	112	117	119	121	121	121	121	121	121	121	121	121	121	121
2000	82	103	103	104	104	104	104	104	104	104	104	104	104	104	104
2001	64	76	83	84	84	86	86	86	86	86	86	86	86	86	86
2002	55	76	80	80	80	80	80	80	80	80	80	80	80	80	80
2003	100	111	113	117	117	117	117	117	117	117	117	117	117	117	117
2004	63	84	86	86	86	86	86	86	86	86	86	86	86	86	86
2005	64	94	93	94	94	95	98	98	98	98	98	98	98	98	98
2006	54	68	70	70	70	70	70	70	70	70	70	70	70	70	70
2007	82	94	98	98	98	98	98	98	98	98	98	98	98	98	98
2008	59	75	75	76	76	76	76	76	76	76	76	76	76	76	76
2009	51	57	57	57	57	57	57	57	57	57	57	57	57	57	57
2010	61	77	78	78	78	78	78	78	78	78	78	78	78	78	78
2011	66	72	74	74	74	74	74	74	74	74	74	74	74	74	74
2012	39	51	52	52	52	52	52	52	52	52	52	52	52	52	52
2013	37	45	46	46	46	46	46	46	46	46	46	46	46	46	46
2014	68	77	78	78	78	78	78	78	78	78	78	78	78	78	78
2015	43	51	51	51	51	51	51	51	51	51	51	51	51	51	51
2016	47	73	75	76	76	76	76	76	76	76	76	76	76	76	76
2017	40	51	51	51	51	51	51	51	51	51	51	51	51	51	51
2018	34	48	48	48	48	49	49	49	49	49	49	49	49	49	49
2019	41	48	48	48	48	48	48	48	48	48	48	48	48	48	48
2020	27	36	37	37	37	37	37	37	37	37	37	37	37	37	37
2021	40	45	45	45	45	45	45	45	45	45	45	45	45	45	45
2022	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57

Accident Year	Age-to-Age Factors															
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	
1989	1.024	1.024	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1990	1.222	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1991	1.143	1.000	1.083	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1992	1.167	1.000	1.057	0.973	1.056	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1993	1.432	1.057	1.054	1.017	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1994	1.250	1.108	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1995	1.500	1.139	1.037	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1996	1.216	1.019	1.009	1.000	1.009	1.000	1.000	1.027	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1997	1.120	1.011	1.032	1.000	1.000	1.010	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1998	1.174	1.037	1.024	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1999	1.067	1.045	1.017	1.017	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2000	1.256	1.000	1.010	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2001	1.188	1.092	1.012	1.000	1.024	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2002	1.382	1.053	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2003	1.110	1.018	1.035	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2004	1.333	1.024	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2005	1.469	0.989	1.011	1.000	1.011	1.032	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2006	1.259	1.029	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2007	1.146	1.043	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2008	1.271	1.000	1.013	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2009	1.118	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2010	1.262	1.013	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2011	1.091	1.028	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2012	1.308	1.020	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2013	1.216	1.022	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2014	1.132	1.013	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2015	1.186	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2016	1.553	1.027	1.013	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2017	1.275	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2018	1.412	1.000	1.000	1.021	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2019	1.171	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2020	1.333	1.028	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2021	1.125	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
All Yr Vol	1.226	1.028	1.012	1.001	1.003	1.002	1.000	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
All Yr Vol Ex. H/L	1.222	1.026	1.012	1.001	1.002	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
10 Yr Vol	1.262	1.014	1.002	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
10 Yr Vol Ex. H/L	1.237	1.015	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
5 Yr Vol	1.253	1.012	1.004	1.003	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
5 Yr Vol Ex. H/L	1.250	1.012	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
3 Yr Vol	1.194	1.008	1.000	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	

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Accident		Age-to-Age Factors																	
Year	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	408-Ult
1989	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1990	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1991	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1992	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1993	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1994	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1995	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1996	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1997	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1998	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2003	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2004	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2008	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2009	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2010	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2012	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2013	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2014	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2015	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2016	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2017	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2018	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2019	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2020	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2021	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
All Yr Vol	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
All Yr Vol Ex. H/L	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
10 Yr Vol	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
10 Yr Vol Ex. H/L	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
5 Yr Vol	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
5 Yr Vol Ex. H/L	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
3 Yr Vol	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	



Miami Valley Risk Management Association  
Auto Liability (AB, AD)  
December 31, 2022

Loss and Count Summary

Accident Year	Retention	Total Limits		Retention Limits		\$500K Limits		Deductibles		Claim Counts	
		Incurred	Paid	Incurred	Paid	Incurred	Paid	Incurred	Paid	Reported	Closed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1989	\$250,000	\$111,919	\$111,919	\$111,919	\$111,919	\$111,919	\$111,919			43	43
1990	250,000	18,683	18,683	18,683	18,683	18,683	18,683			33	33
1991	250,000	13,946	13,946	13,946	13,946	13,946	13,946			26	26
1992	250,000	39,293	39,293	39,293	39,293	39,293	39,293			38	38
1993	250,000	329,494	329,494	329,494	329,494	329,494	329,494			60	60
1994	250,000	126,181	126,181	126,181	126,181	126,181	126,181			72	72
1995	250,000	157,537	157,537	157,537	157,537	157,537	157,537			85	85
1996	250,000	75,097	75,097	75,097	75,097	75,097	75,097			114	114
1997	500,000	1,018,826	1,018,826	572,332	572,332	572,332	572,332			98	98
1998	500,000	98,687	98,687	98,687	98,687	98,687	98,687			86	86
1999	500,000	203,725	203,725	203,725	203,725	203,725	203,725			121	121
2000	500,000	81,660	81,660	81,660	81,660	81,660	81,660			104	104
2001	500,000	555,168	555,168	555,168	555,168	555,168	555,168			86	86
2002	500,000	167,747	167,747	167,747	167,747	167,747	167,747			80	80
2003	1,000,000	168,870	168,870	168,870	168,870	168,870	168,870			117	117
2004	1,000,000	49,417	49,417	49,417	49,417	49,417	49,417			86	86
2005	1,000,000	243,966	243,966	243,966	243,966	243,966	243,966			98	98
2006	1,000,000	145,431	145,431	145,431	145,431	145,431	145,431	\$48,974	\$48,974	70	70
2007	1,000,000	275,826	275,826	275,826	275,826	275,826	275,826	76,272	76,272	98	98
2008	1,000,000	136,527	136,527	136,527	136,527	136,527	136,527	46,288	46,288	76	76
2009	1,000,000	31,122	31,122	31,122	31,122	31,122	31,122	30,922	30,922	57	57
2010	500,000	161,512	161,512	161,512	161,512	161,512	161,512	43,334	43,334	78	78
2011	500,000	87,731	87,731	87,731	87,731	87,731	87,731	43,911	43,911	74	74
2012	500,000	38,269	38,269	38,269	38,269	38,269	38,269	24,213	24,213	52	52
2013	500,000	234,785	234,785	234,785	234,785	234,785	234,785	40,252	40,252	46	46
2014	500,000	104,340	104,340	104,340	104,340	104,340	104,340	64,282	64,282	78	78
2015	500,000	82,316	82,316	82,316	82,316	82,316	82,316	47,339	47,339	51	51
2016	500,000	145,899	145,899	145,899	145,899	145,899	145,899	71,966	71,966	76	76
2017	500,000	65,054	65,054	65,054	65,054	65,054	65,054	40,684	40,684	51	51
2018	500,000	78,866	78,866	78,866	78,866	78,866	78,866	36,140	36,140	49	49
2019	500,000	70,113	65,126	70,113	65,126	70,113	65,126	43,237	40,750	49	48
2020	500,000	69,079	69,079	69,079	69,079	69,079	69,079	32,317	32,317	37	37
2021	500,000	120,307	120,307	120,307	120,307	120,307	120,307	46,935	46,935	45	45
2022	500,000	223,624	51,820	223,624	51,820	223,624	51,820	45,086	32,162	66	57
Total		\$5,531,017	\$5,354,226	\$5,084,523	\$4,907,732	\$5,084,523	\$4,907,732	\$782,153	\$766,742	2,400	2,390

Notes:  
(2)-(12) Provided by MVRMA

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Summary of Loss Reserve Estimates  
Retained Limits

Accident Year	Selected Ultimate Loss	Incurred Loss	Paid Loss	Case Reserves	Indicated IBNR	Estimated Total Reserves
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1989	\$207,853	\$207,853	\$207,853	\$0	\$0	\$0
1990	439,863	439,863	439,863	0	0	0
1991	84,015	84,015	84,015	0	0	0
1992	139,376	139,376	139,376	0	0	0
1993	600,979	600,979	600,979	0	0	0
1994	106,065	106,065	106,065	0	0	0
1995	156,790	156,790	156,790	0	0	0
1996	357,926	357,926	357,926	0	0	0
1997	706,526	706,526	706,526	0	0	0
1998	554,289	554,289	554,289	0	0	0
1999	657,094	657,094	657,094	0	0	0
2000	164,560	164,560	164,560	0	0	0
2001	497,423	497,423	497,423	0	0	0
2002	1,347,177	1,347,177	1,347,177	0	0	0
2003	269,762	269,762	269,762	0	0	0
2004	511,964	511,964	511,964	0	0	0
2005	857,801	857,801	857,801	0	0	0
2006	915,795	915,795	915,795	0	0	0
2007	312,120	312,120	312,120	0	0	0
2008	856,672	856,672	856,672	0	0	0
2009	1,177,813	1,177,813	1,177,813	0	0	0
2010	972,613	972,613	972,613	0	0	0
2011	323,802	323,802	323,802	0	0	0
2012	542,610	542,610	542,610	0	0	0
2013	601,882	601,882	601,882	0	0	0
2014	925,867	925,867	925,867	0	0	0
2015	314,175	314,175	314,175	0	0	0
2016	724,000	700,320	667,691	32,628	23,680	56,309
2017	541,861	541,861	541,861	0	0	0
2018	752,000	710,603	668,154	42,448	41,397	83,846
2019	665,000	545,803	403,539	142,264	119,197	261,461
2020	855,000	557,418	541,959	15,459	297,582	313,041
2021	650,000	138,791	120,702	18,089	511,209	529,298
2022	1,065,000	184,839	67,322	117,516	880,161	997,678
Total	\$19,855,672	\$17,982,447	\$17,614,041	\$368,406	\$1,873,226	\$2,241,632

Notes:

- (2) From Exhibit 4, Col (11)
- (3)-(5) Provided by MVRMA
- (6) = (2) - (3)
- (7) = (5) + (6)

General Liability  
Exhibit 2

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Ultimate Average Indications  
Retained Limits

Accident Year	Selected Ultimate Loss	Net Operating Funds (\$00,000's)	Selected Ultimate Claims	Ultimate Claims per \$10M NOF	Ultimate Loss per \$100K NOF	Ultimate Loss per Claim
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1989	\$207,853	\$561	89	15.9	\$370	\$2,335
1990	439,863	722	99	13.7	609	4,443
1991	84,015	830	56	6.7	101	1,500
1992	139,376	1,010	72	7.1	138	1,936
1993	600,979	1,255	93	7.4	479	6,462
1994	106,065	1,413	108	7.6	75	982
1995	156,790	1,481	85	5.7	106	1,845
1996	357,926	1,520	121	8.0	235	2,958
1997	706,526	1,903	99	5.2	371	7,137
1998	554,289	2,011	142	7.1	276	3,903
1999	657,094	2,162	142	6.6	304	4,627
2000	164,560	2,269	146	6.4	73	1,127
2001	497,423	2,510	118	4.7	198	4,215
2002	1,347,177	2,741	164	6.0	492	8,214
2003	269,762	2,985	148	5.0	90	1,823
2004	511,964	3,183	119	3.7	161	4,302
2005	857,801	3,450	128	3.7	249	6,702
2006	915,795	3,591	110	3.1	255	8,325
2007	312,120	3,669	143	3.9	85	2,183
2008	856,672	3,954	177	4.5	217	4,840
2009	1,177,813	4,058	117	2.9	290	10,067
2010	972,613	4,063	153	3.8	239	6,357
2011	323,802	4,229	186	4.4	77	1,741
2012	542,610	4,071	137	3.4	133	3,961
2013	601,882	4,071	159	3.9	148	3,785
2014	925,867	4,117	175	4.3	225	5,291
2015	314,175	4,202	147	3.5	75	2,137
2016	724,000	4,346	142	3.3	167	5,099
2017	541,861	4,444	158	3.6	122	3,430
2018	752,000	4,772	173	3.6	158	4,347
2019	665,000	5,120	143	2.8	130	4,650
2020	855,000	6,019	82	1.4	142	10,427
2021	650,000	4,500	74	1.6	144	8,784
2022	1,065,000	6,121	93	1.5	174	11,452
Total	\$19,855,672	\$107,351	4,298	4.0	\$185	\$4,620

Notes:

- (2) From Exhibit 4, Col (11)
- (3) Provided by MVRMA
- (4) From Exhibit 15, Col (6)
- (5) = (4) / (3) x 100
- (6) = (2) / (3)
- (7) = (2) / (4)

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Comparison of Ultimate Loss to Prior Ultimate Loss  
Retained Limits

Accident Year	Selected Ultimate Loss @ 12/31/2021	Selected Ultimate Loss @ 12/31/2022	Difference	Percent Change
(1)	(2)	(3)	(4)	(5)
1989	\$207,853	\$207,853	\$0	0.0%
1990	439,863	439,863	0	0.0%
1991	84,015	84,015	0	0.0%
1992	139,376	139,376	0	0.0%
1993	600,979	600,979	0	0.0%
1994	106,065	106,065	0	0.0%
1995	156,790	156,790	0	0.0%
1996	357,926	357,926	0	0.0%
1997	706,526	706,526	0	0.0%
1998	554,289	554,289	0	0.0%
1999	657,094	657,094	0	0.0%
2000	164,560	164,560	0	0.0%
2001	497,423	497,423	0	0.0%
2002	1,347,177	1,347,177	0	0.0%
2003	269,762	269,762	0	0.0%
2004	511,964	511,964	0	0.0%
2005	857,801	857,801	0	0.0%
2006	915,795	915,795	0	0.0%
2007	312,120	312,120	0	0.0%
2008	856,672	856,672	0	0.0%
2009	1,177,813	1,177,813	0	0.0%
2010	972,613	972,613	0	0.0%
2011	323,802	323,802	0	0.0%
2012	542,610	542,610	0	0.0%
2013	601,882	601,882	0	0.0%
2014	925,867	925,867	0	0.0%
2015	314,175	314,175	0	0.0%
2016	846,000	724,000	(122,000)	-14.4%
2017	541,861	541,861	0	0.0%
2018	1,025,000	752,000	(273,000)	-26.6%
2019	875,000	665,000	(210,000)	-24.0%
2020	1,250,000	855,000	(395,000)	-31.6%
2021	1,050,000	650,000	(400,000)	-38.1%
Total	\$20,190,672	\$18,790,672	(\$1,400,000)	-6.9%

Notes:

- (2) From Pinnacle's analysis of unpaid loss & LAE at 12/31/2021
- (3) From Exhibit 4, Col (11)
- (4) = (3) - (2)
- (5) = (4) / (2)

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Selected Ultimate Loss  
Retained Limits

Accident Year	Retention	Industry Development		MVRMA's Loss Development			MVRMA Expected Loss Method	MVRMA Incurred BF Method	MVRMA Paid BF Method	Selected Ultimate Loss Method
		Incurring Loss Method	Paid Loss Method	Incurring Loss Method	Paid Loss Method	Case Reserve Method				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1989	\$250,000	\$207,853	\$207,853	\$207,853	\$207,853	\$207,853	\$51,076	\$207,853	\$207,853	\$207,853
1990	250,000	439,863	439,863	439,863	439,863	439,863	67,033	439,863	439,863	439,863
1991	250,000	84,015	84,015	84,015	84,015	84,015	78,650	84,015	84,015	84,015
1992	250,000	139,376	139,376	139,376	139,376	139,376	97,600	139,376	139,376	139,376
1993	250,000	600,979	600,979	600,979	600,979	600,979	87,310	600,979	600,979	600,979
1994	250,000	106,065	106,065	106,065	106,065	106,065	142,052	106,065	106,065	106,065
1995	250,000	156,790	156,790	156,790	156,790	156,790	151,857	156,790	156,790	156,790
1996	250,000	357,926	357,926	357,926	357,926	357,926	158,985	357,926	357,926	357,926
1997	500,000	706,526	706,526	706,526	706,526	706,526	202,966	706,526	706,526	706,526
1998	500,000	554,289	554,289	554,289	554,289	554,289	218,837	554,289	554,289	554,289
1999	500,000	657,094	657,094	657,094	657,094	657,094	239,882	657,094	657,094	657,094
2000	500,000	164,560	164,560	164,560	164,560	164,560	256,865	164,560	164,560	164,560
2001	500,000	497,423	497,423	497,423	497,423	497,423	289,764	497,423	497,423	497,423
2002	500,000	1,347,222	1,347,243	1,347,177	1,347,177	1,347,177	322,762	1,347,177	1,347,177	1,347,177
2003	1,000,000	269,780	269,788	269,762	269,762	269,762	358,609	269,762	269,762	269,762
2004	1,000,000	512,032	512,064	511,964	511,964	511,964	390,016	511,964	511,964	511,964
2005	1,000,000	858,028	858,136	857,801	857,801	857,801	431,126	857,801	857,801	857,801
2006	1,000,000	916,279	916,510	915,795	915,795	915,795	457,738	915,795	915,795	915,795
2007	1,000,000	312,450	312,607	312,120	312,120	312,120	477,034	312,120	312,120	312,120
2008	1,000,000	858,485	859,349	856,672	856,672	856,672	524,453	856,672	856,672	856,672
2009	1,000,000	1,182,804	1,185,185	1,177,813	1,177,813	1,177,813	568,399	1,177,813	1,177,813	1,177,813
2010	500,000	980,874	984,828	972,613	972,613	972,613	560,654	972,613	972,613	972,613
2011	500,000	329,325	331,986	323,802	323,802	323,802	595,226	323,802	323,802	323,802
2012	500,000	561,280	570,386	542,610	542,610	542,610	584,440	542,610	542,610	542,610
2013	500,000	644,014	665,080	601,882	601,882	601,882	596,129	601,882	601,882	601,882
2014	500,000	1,005,042	1,048,660	925,867	926,793	925,867	614,873	925,867	926,481	925,867
2015	500,000	347,351	367,585	314,175	317,005	314,175	640,112	314,175	319,890	314,175
2016	500,000	793,628	824,947	705,922	680,443	724,289	675,303	705,679	680,347	724,000
2017	500,000	639,234	722,371	551,658	568,776	541,861	704,431	554,371	575,196	541,861
2018	500,000	895,302	1,006,531	752,389	841,611	726,261	771,445	753,447	827,150	752,000
2019	500,000	774,314	753,803	635,688	579,462	669,823	844,273	665,182	659,858	665,000
2020	500,000	976,628	1,467,933	792,043	1,050,605	581,787	1,012,362	857,308	1,032,090	855,000
2021	500,000	340,439	563,955	335,258	514,767	197,846	772,023	591,209	711,702	650,000
2022	500,000	875,038	865,010	1,071,572	861,344	1,215,710	1,071,092	1,071,174	1,054,698	1,065,000
Total		\$20,092,306	\$21,106,715	\$19,447,341	\$19,703,575	\$19,260,388	\$15,015,378	\$19,801,182	\$20,150,179	\$19,855,672

Notes:

- |     |                            |      |                          |
|-----|----------------------------|------|--------------------------|
| (2) | Provided by MVRMA          | (7)  | From Exhibit 10, Col (8) |
| (3) | From Exhibit 11.1, Col (4) | (8)  | From Exhibit 5, Col (4)  |
| (4) | From Exhibit 11.2, Col (4) | (9)  | From Exhibit 5, Col (8)  |
| (5) | From Exhibit 8, Col (4)    | (10) | From Exhibit 6, Col (8)  |
| (6) | From Exhibit 9, Col (4)    |      |                          |

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Ultimate Loss Based on Bornhuetter-Ferguson Method Using Exposures and Incurred Loss  
Retained Limits

Accident Year	Net Operating Funds (\$00,000's)	Selected Loss Cost	Expected Loss	Percent Undeveloped	Undeveloped Loss	Cumulative Incurred Loss	Projected Ultimate Loss	Indicated Loss Cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1989	\$561	\$91	\$51,076	0.0%	\$0	\$207,853	\$207,853	\$370
1990	722	93	67,033	0.0%	0	439,863	439,863	609
1991	830	95	78,650	0.0%	0	84,015	84,015	101
1992	1,010	97	97,600	0.0%	0	139,376	139,376	138
1993	1,255	70	87,310	0.0%	0	600,979	600,979	479
1994	1,413	101	142,052	0.0%	0	106,065	106,065	75
1995	1,481	103	151,857	0.0%	0	156,790	156,790	106
1996	1,520	105	158,985	0.0%	0	357,926	357,926	235
1997	1,903	107	202,966	0.0%	0	706,526	706,526	371
1998	2,011	109	218,837	0.0%	0	554,289	554,289	276
1999	2,162	111	239,882	0.0%	0	657,094	657,094	304
2000	2,269	113	256,865	0.0%	0	164,560	164,560	73
2001	2,510	115	289,764	0.0%	0	497,423	497,423	198
2002	2,741	118	322,762	0.0%	0	1,347,177	1,347,177	492
2003	2,985	120	358,609	0.0%	0	269,762	269,762	90
2004	3,183	123	390,016	0.0%	0	511,964	511,964	161
2005	3,450	125	431,126	0.0%	0	857,801	857,801	249
2006	3,591	127	457,738	0.0%	0	915,795	915,795	255
2007	3,669	130	477,034	0.0%	0	312,120	312,120	85
2008	3,954	133	524,453	0.0%	0	856,672	856,672	217
2009	4,058	140	568,399	0.0%	0	1,177,813	1,177,813	290
2010	4,063	138	560,654	0.0%	0	972,613	972,613	239
2011	4,229	141	595,226	0.0%	0	323,802	323,802	77
2012	4,071	144	584,440	0.0%	0	542,610	542,610	133
2013	4,071	146	596,129	0.0%	0	601,882	601,882	148
2014	4,117	149	614,873	0.0%	0	925,867	925,867	225
2015	4,202	152	640,112	0.0%	0	314,175	314,175	75
2016	4,346	155	675,303	0.8%	5,360	700,320	705,679	162
2017	4,444	159	704,431	1.8%	12,510	541,861	554,371	125
2018	4,772	162	771,445	5.6%	42,844	710,603	753,447	158
2019	5,120	165	844,273	14.1%	119,378	545,803	665,182	130
2020	6,019	168	1,012,362	29.6%	299,890	557,418	857,308	142
2021	4,500	172	772,023	58.6%	452,418	138,791	591,209	131
2022	6,121	175	1,071,092	82.8%	886,336	184,839	1,071,174	175
Total	\$107,351		\$15,015,378		\$1,818,735	\$17,982,447	\$19,801,182	\$184

Notes:

- (2) Provided by MVRMA
- (3) From Exhibit 7.1, Col (8)
- (4) = (2) x (3)
- (5) Based on Exhibit 12;  
\$500K limits for 1989-2002 and 2010-2022; \$1M limits for 2003-2009
- (6) = (4) x (5)
- (7) Provided by MVRMA
- (8) = (6) + (7)
- (9) = (8) / (2)

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Ultimate Loss Based on Bornhuetter-Ferguson Method Using Exposures and Paid Loss  
Retained Limits

Accident Year	Net Operating Funds (\$00,000's)	Selected Loss Cost	Expected Loss	Percent Unpaid	Undeveloped Loss	Cumulative Paid Loss	Projected Ultimate Loss	Indicated Loss Cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1989	\$561	\$91	\$51,076	0.0%	\$0	\$207,853	\$207,853	\$370
1990	722	93	67,033	0.0%	0	439,863	439,863	609
1991	830	95	78,650	0.0%	0	84,015	84,015	101
1992	1,010	97	97,600	0.0%	0	139,376	139,376	138
1993	1,255	70	87,310	0.0%	0	600,979	600,979	479
1994	1,413	101	142,052	0.0%	0	106,065	106,065	75
1995	1,481	103	151,857	0.0%	0	156,790	156,790	106
1996	1,520	105	158,985	0.0%	0	357,926	357,926	235
1997	1,903	107	202,966	0.0%	0	706,526	706,526	371
1998	2,011	109	218,837	0.0%	0	554,289	554,289	276
1999	2,162	111	239,882	0.0%	0	657,094	657,094	304
2000	2,269	113	256,865	0.0%	0	164,560	164,560	73
2001	2,510	115	289,764	0.0%	0	497,423	497,423	198
2002	2,741	118	322,762	0.0%	0	1,347,177	1,347,177	492
2003	2,985	120	358,609	0.0%	0	269,762	269,762	90
2004	3,183	123	390,016	0.0%	0	511,964	511,964	161
2005	3,450	125	431,126	0.0%	0	857,801	857,801	249
2006	3,591	127	457,738	0.0%	0	915,795	915,795	255
2007	3,669	130	477,034	0.0%	0	312,120	312,120	85
2008	3,954	133	524,453	0.0%	0	856,672	856,672	217
2009	4,058	140	568,399	0.0%	0	1,177,813	1,177,813	290
2010	4,063	138	560,654	0.0%	0	972,613	972,613	239
2011	4,229	141	595,226	0.0%	0	323,802	323,802	77
2012	4,071	144	584,440	0.0%	0	542,610	542,610	133
2013	4,071	146	596,129	0.0%	0	601,882	601,882	148
2014	4,117	149	614,873	0.1%	614	925,867	926,481	225
2015	4,202	152	640,112	0.9%	5,715	314,175	319,890	76
2016	4,346	155	675,303	1.9%	12,655	667,691	680,347	157
2017	4,444	159	704,431	4.7%	33,334	541,861	575,196	129
2018	4,772	162	771,445	20.6%	158,995	668,154	827,150	173
2019	5,120	165	844,273	30.4%	256,319	403,539	659,858	129
2020	6,019	168	1,012,362	48.4%	490,131	541,959	1,032,090	171
2021	4,500	172	772,023	76.6%	591,000	120,702	711,702	158
2022	6,121	175	1,071,092	92.2%	987,375	67,322	1,054,698	172
Total	\$107,351		\$15,015,378		\$2,536,138	\$17,614,041	\$20,150,179	\$188

Notes:

- (2) Provided by MVRMA
- (3) From Exhibit 7.1, Col (8)
- (4) = (2) x (3)
- (5) Based on Exhibit 12;  
\$500K limits for 1989-2002 and 2010-2021; \$1M limits for 2003-2009
- (6) = (4) x (5)
- (7) Provided by MVRMA
- (8) = (6) + (7)
- (9) = (8) / (2)

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Initial Expected Loss Cost  
Retained Limits

Accident Year	Net Operating Funds (\$00,000's)	Initial Ultimate Loss	Indicated Loss Cost	Limits Factor to \$500K	Trend Factor to 2022	Trended \$500K Limits Loss Cost	Expected Loss Cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1989	\$561	\$207,853	\$370	1.000	1.922	\$712	\$91
1990	722	439,863	609	1.000	1.885	1,148	93
1991	830	84,015	101	1.000	1.848	187	95
1992	1,010	139,376	138	1.000	1.811	250	97
1993	1,255	600,979	479	1.416	1.776	1,205	70
1994	1,413	106,065	75	1.000	1.741	131	101
1995	1,481	156,790	106	1.000	1.707	181	103
1996	1,520	357,926	235	1.000	1.673	394	105
1997	1,903	706,526	371	1.000	1.641	609	107
1998	2,011	554,289	276	1.000	1.608	443	109
1999	2,162	657,094	304	1.000	1.577	479	111
2000	2,269	164,560	73	1.000	1.546	112	113
2001	2,510	497,423	198	1.000	1.516	300	115
2002	2,741	1,347,177	492	1.000	1.486	730	118
2003	2,985	269,762	90	1.000	1.457	132	120
2004	3,183	511,964	161	1.000	1.428	230	123
2005	3,450	857,801	249	1.000	1.400	348	125
2006	3,591	915,795	255	1.000	1.373	350	127
2007	3,669	312,120	85	1.000	1.346	115	130
2008	3,954	856,672	217	1.000	1.319	286	133
2009	4,058	1,177,813	290	0.966	1.294	363	140
2010	4,063	972,613	239	1.000	1.268	304	138
2011	4,229	323,802	77	1.000	1.243	95	141
2012	4,071	542,610	133	1.000	1.219	162	144
2013	4,071	601,882	148	1.000	1.195	177	146
2014	4,117	925,867	225	1.000	1.172	264	149
2015	4,202	314,175	75	1.000	1.149	86	152
2016	4,346	705,922	162	1.000	1.126	183	155
2017	4,444	551,658	124	1.000	1.104	137	159
2018	4,772	752,389	158	1.000	1.082	171	162
2019	5,120	635,688	124	1.000	1.061	132	165
2020	6,019	792,043	132	1.000	1.040	137	168
2021	4,500	335,258	75	1.000	1.020	76	172
2022	6,121	1,071,572	175	1.000	1.000	175	175
Total	\$107,351	\$19,447,341	\$181				
					Weighted Average Ex. Hi/Lo	\$243	
					10-Year Weighted Avg	153	
					10-Year Weighted Avg Ex. Hi/Lo	150	
					5-Year Weighted Avg	140	
					Selected 2022 Loss Cost	\$175	

Notes:

- (2) Provided by MVRMA
- (3) From Exhibit 7.2, Col (5)
- (4) = (3) / (2)
- (5) From Exhibit 7.3, Col (7)
- (6) Based on selected trend of 2.0%
- (7) = (4) x (5) x (6)
- (8) = Selected Loss Cost / [(6) x (5)]



General Liability  
Exhibit 7.2

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Initial Selected Ultimate Loss  
Retained Limits

Accident Year	Projected Ultimate Loss Based on			Initial Ultimate Loss
	Incurred	Paid	Case	
(1)	(2)	(3)	(4)	(5)
1989	\$207,853	\$207,853	\$207,853	\$207,853
1990	439,863	439,863	439,863	439,863
1991	84,015	84,015	84,015	84,015
1992	139,376	139,376	139,376	139,376
1993	600,979	600,979	600,979	600,979
1994	106,065	106,065	106,065	106,065
1995	156,790	156,790	156,790	156,790
1996	357,926	357,926	357,926	357,926
1997	706,526	706,526	706,526	706,526
1998	554,289	554,289	554,289	554,289
1999	657,094	657,094	657,094	657,094
2000	164,560	164,560	164,560	164,560
2001	497,423	497,423	497,423	497,423
2002	1,347,177	1,347,177	1,347,177	1,347,177
2003	269,762	269,762	269,762	269,762
2004	511,964	511,964	511,964	511,964
2005	857,801	857,801	857,801	857,801
2006	915,795	915,795	915,795	915,795
2007	312,120	312,120	312,120	312,120
2008	856,672	856,672	856,672	856,672
2009	1,177,813	1,177,813	1,177,813	1,177,813
2010	972,613	972,613	972,613	972,613
2011	323,802	323,802	323,802	323,802
2012	542,610	542,610	542,610	542,610
2013	601,882	601,882	601,882	601,882
2014	925,867	926,793	925,867	925,867
2015	314,175	317,005	314,175	314,175
2016	705,922	680,443	724,289	705,922
2017	551,658	568,776	541,861	551,658
2018	752,389	841,611	726,261	752,389
2019	635,688	579,462	669,823	635,688
2020	792,043	1,050,605	581,787	792,043
2021	335,258	514,767	197,846	335,258
2022	1,071,572	861,344	1,215,710	1,071,572
Total	\$19,447,341	\$19,703,575	\$19,260,388	\$19,447,341

Notes:

- (2) From Exhibit 8, Col (4)
- (3) From Exhibit 9, Col (4)
- (4) From Exhibit 10, Col (8)

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Estimated Limits Factor

Accident Year	Retention	Incurred Losses at		Incurred Limits Factors	Industry Limits Factors	Selected Limits Factors
		\$500K Limits	Retention Limits			
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1989	\$250,000	\$207,853	\$207,853	1.000		1.000
1990	250,000	439,863	439,863	1.000		1.000
1991	250,000	84,015	84,015	1.000		1.000
1992	250,000	139,376	139,376	1.000		1.000
1993	250,000	850,979	600,979	1.416		1.416
1994	250,000	106,065	106,065	1.000		1.000
1995	250,000	156,790	156,790	1.000		1.000
1996	250,000	357,926	357,926	1.000		1.000
1997	500,000	706,526	706,526	1.000	1.000	1.000
1998	500,000	554,289	554,289	1.000	1.000	1.000
1999	500,000	657,094	657,094	1.000	1.000	1.000
2000	500,000	164,560	164,560	1.000	1.000	1.000
2001	500,000	497,423	497,423	1.000	1.000	1.000
2002	500,000	1,347,177	1,347,177	1.000	1.000	1.000
2003	1,000,000	269,762	269,762	1.000	0.914	1.000
2004	1,000,000	511,964	511,964	1.000	0.911	1.000
2005	1,000,000	857,801	857,801	1.000	0.909	1.000
2006	1,000,000	915,795	915,795	1.000	0.906	1.000
2007	1,000,000	312,120	312,120	1.000	0.904	1.000
2008	1,000,000	856,672	856,672	1.000	0.901	1.000
2009	1,000,000	1,137,677	1,177,813	0.966	0.898	0.966
2010	500,000	972,613	972,613	1.000	1.000	1.000
2011	500,000	323,802	323,802	1.000	1.000	1.000
2012	500,000	542,610	542,610	1.000	1.000	1.000
2013	500,000	601,882	601,882	1.000	1.000	1.000
2014	500,000	925,867	925,867	1.000	1.000	1.000
2015	500,000	314,175	314,175	1.000	1.000	1.000
2016	500,000	700,320	700,320	1.000	1.000	1.000
2017	500,000	541,861	541,861	1.000	1.000	1.000
2018	500,000	710,603	710,603	1.000	1.000	1.000
2019	500,000	545,803	545,803	1.000	1.000	1.000
2020	500,000	557,418	557,418	1.000	1.000	1.000
2021	500,000	138,791	138,791	1.000	1.000	1.000
2022	500,000	184,839	184,839	1.000	1.000	1.000
Total		\$18,192,311	\$17,982,447			

Notes:

(2)-(4) Provided by MVRMA

(5) = (3) / (4)

(6) Based on insurance industry development

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Ultimate Loss Based on Incurred Loss Development Method  
Retained Limits

Accident Year (1)	Cumulative Incurred Loss (2)	Loss Development Factors (3)	Projected Ultimate Loss (4)
1989	\$207,853	1.000	\$207,853
1990	439,863	1.000	439,863
1991	84,015	1.000	84,015
1992	139,376	1.000	139,376
1993	600,979	1.000	600,979
1994	106,065	1.000	106,065
1995	156,790	1.000	156,790
1996	357,926	1.000	357,926
1997	706,526	1.000	706,526
1998	554,289	1.000	554,289
1999	657,094	1.000	657,094
2000	164,560	1.000	164,560
2001	497,423	1.000	497,423
2002	1,347,177	1.000	1,347,177
2003	269,762	1.000	269,762
2004	511,964	1.000	511,964
2005	857,801	1.000	857,801
2006	915,795	1.000	915,795
2007	312,120	1.000	312,120
2008	856,672	1.000	856,672
2009	1,177,813	1.000	1,177,813
2010	972,613	1.000	972,613
2011	323,802	1.000	323,802
2012	542,610	1.000	542,610
2013	601,882	1.000	601,882
2014	925,867	1.000	925,867
2015	314,175	1.000	314,175
2016	700,320	1.008	705,922
2017	541,861	1.018	551,658
2018	710,603	1.059	752,389
2019	545,803	1.165	635,688
2020	557,418	1.421	792,043
2021	138,791	2.416	335,258
2022	184,839	5.797	1,071,572
Total	\$17,982,447		\$19,447,341

Notes:

- (2) Provided by MVRMA
- (3) Based on Exhibit 12
- (4) = (2) x (3)

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Ultimate Loss Based on Paid Loss Development Method  
Retained Limits

Accident Year (1)	Cumulative Paid Loss (2)	Loss Development Factors (3)	Projected Ultimate Loss (4)
1989	\$207,853	1.000	\$207,853
1990	439,863	1.000	439,863
1991	84,015	1.000	84,015
1992	139,376	1.000	139,376
1993	600,979	1.000	600,979
1994	106,065	1.000	106,065
1995	156,790	1.000	156,790
1996	357,926	1.000	357,926
1997	706,526	1.000	706,526
1998	554,289	1.000	554,289
1999	657,094	1.000	657,094
2000	164,560	1.000	164,560
2001	497,423	1.000	497,423
2002	1,347,177	1.000	1,347,177
2003	269,762	1.000	269,762
2004	511,964	1.000	511,964
2005	857,801	1.000	857,801
2006	915,795	1.000	915,795
2007	312,120	1.000	312,120
2008	856,672	1.000	856,672
2009	1,177,813	1.000	1,177,813
2010	972,613	1.000	972,613
2011	323,802	1.000	323,802
2012	542,610	1.000	542,610
2013	601,882	1.000	601,882
2014	925,867	1.001	926,793
2015	314,175	1.009	317,005
2016	667,691	1.019	680,443
2017	541,861	1.050	568,776
2018	668,154	1.260	841,611
2019	403,539	1.436	579,462
2020	541,959	1.939	1,050,605
2021	120,702	4.265	514,767
2022	67,322	12.794	861,344
Total	\$17,614,041		\$19,703,575

Notes:

- (2) Provided by MVRMA
- (3) Based on Exhibit 12
- (4) = (2) x (3)

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Ultimate Loss Based on Case Reserve Development Method  
Retained Limits

Accident Year	Retention	Cumulative Paid Loss	Case Reserves	Percent Developed			Projected Ultimate Loss
				Incurred	Paid	Reserve	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1989	\$250,000	\$207,853	\$0	100.0%	100.0%	100.0%	\$207,853
1990	250,000	439,863	0	100.0%	100.0%	100.0%	439,863
1991	250,000	84,015	0	100.0%	100.0%	100.0%	84,015
1992	250,000	139,376	0	100.0%	100.0%	100.0%	139,376
1993	250,000	600,979	0	100.0%	100.0%	100.0%	600,979
1994	250,000	106,065	0	100.0%	100.0%	100.0%	106,065
1995	250,000	156,790	0	100.0%	100.0%	100.0%	156,790
1996	250,000	357,926	0	100.0%	100.0%	100.0%	357,926
1997	500,000	706,526	0	100.0%	100.0%	100.0%	706,526
1998	500,000	554,289	0	100.0%	100.0%	100.0%	554,289
1999	500,000	657,094	0	100.0%	100.0%	100.0%	657,094
2000	500,000	164,560	0	100.0%	100.0%	100.0%	164,560
2001	500,000	497,423	0	100.0%	100.0%	100.0%	497,423
2002	500,000	1,347,177	0	100.0%	100.0%	100.0%	1,347,177
2003	1,000,000	269,762	0	100.0%	100.0%	100.0%	269,762
2004	1,000,000	511,964	0	100.0%	100.0%	100.0%	511,964
2005	1,000,000	857,801	0	100.0%	100.0%	100.0%	857,801
2006	1,000,000	915,795	0	100.0%	100.0%	100.0%	915,795
2007	1,000,000	312,120	0	100.0%	100.0%	100.0%	312,120
2008	1,000,000	856,672	0	100.0%	100.0%	100.0%	856,672
2009	1,000,000	1,177,813	0	100.0%	100.0%	100.0%	1,177,813
2010	500,000	972,613	0	100.0%	100.0%	100.0%	972,613
2011	500,000	323,802	0	100.0%	100.0%	100.0%	323,802
2012	500,000	542,610	0	100.0%	100.0%	100.0%	542,610
2013	500,000	601,882	0	100.0%	100.0%	100.0%	601,882
2014	500,000	925,867	0	100.0%	99.9%	100.0%	925,867
2015	500,000	314,175	0	100.0%	99.1%	100.0%	314,175
2016	500,000	667,691	32,628	99.2%	98.1%	57.6%	724,289
2017	500,000	541,861	0	98.2%	95.3%	62.5%	541,861
2018	500,000	668,154	42,448	94.4%	79.4%	73.1%	726,261
2019	500,000	403,539	142,264	85.9%	69.6%	53.4%	669,823
2020	500,000	541,959	15,459	70.4%	51.6%	38.8%	581,787
2021	500,000	120,702	18,089	41.4%	23.4%	23.4%	197,846
2022	500,000	67,322	117,516	17.2%	7.8%	10.2%	1,215,710
Total		\$17,614,041	\$368,406				\$19,260,388

Notes:

- (2)-(4) Provided by MVRMA  
 (5)-(6) Based on Exhibit 12  
 (7) = [(5) - (6)] / [(1.0 - (6))]  
 (8) = (3) + [(4) / (7)]

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Ultimate Loss Based on Incurred Loss Development Method Using Industry Factors  
Retained Limits

Accident Year	Cumulative Incurred Loss	Industry Loss Development Factors	Projected Ultimate Loss
(1)	(2)	(3)	(4)
1989	\$207,853	1.000	\$207,853
1990	439,863	1.000	439,863
1991	84,015	1.000	84,015
1992	139,376	1.000	139,376
1993	600,979	1.000	600,979
1994	106,065	1.000	106,065
1995	156,790	1.000	156,790
1996	357,926	1.000	357,926
1997	706,526	1.000	706,526
1998	554,289	1.000	554,289
1999	657,094	1.000	657,094
2000	164,560	1.000	164,560
2001	497,423	1.000	497,423
2002	1,347,177	1.000	1,347,222
2003	269,762	1.000	269,780
2004	511,964	1.000	512,032
2005	857,801	1.000	858,028
2006	915,795	1.001	916,279
2007	312,120	1.001	312,450
2008	856,672	1.002	858,485
2009	1,177,813	1.004	1,182,804
2010	972,613	1.008	980,874
2011	323,802	1.017	329,325
2012	542,610	1.034	561,280
2013	601,882	1.070	644,014
2014	925,867	1.086	1,005,042
2015	314,175	1.106	347,351
2016	700,320	1.133	793,628
2017	541,861	1.180	639,234
2018	710,603	1.260	895,302
2019	545,803	1.419	774,314
2020	557,418	1.752	976,628
2021	138,791	2.453	340,439
2022	184,839	4.734	875,038
Total	\$17,982,447		\$20,092,306

Notes:

- (2) Provided by MVRMA
- (3) Based on insurance industry development
- (4) = (2) x (3)

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Ultimate Loss Based on Paid Loss Development Method Using Industry Factors  
Retained Limits

Accident Year	Cumulative Paid Loss	Industry Loss Development Factors	Projected Ultimate Loss
(1)	(2)	(3)	(4)
1989	\$207,853	1.000	\$207,853
1990	439,863	1.000	439,863
1991	84,015	1.000	84,015
1992	139,376	1.000	139,376
1993	600,979	1.000	600,979
1994	106,065	1.000	106,065
1995	156,790	1.000	156,790
1996	357,926	1.000	357,926
1997	706,526	1.000	706,526
1998	554,289	1.000	554,289
1999	657,094	1.000	657,094
2000	164,560	1.000	164,560
2001	497,423	1.000	497,423
2002	1,347,177	1.000	1,347,243
2003	269,762	1.000	269,788
2004	511,964	1.000	512,064
2005	857,801	1.000	858,136
2006	915,795	1.001	916,510
2007	312,120	1.002	312,607
2008	856,672	1.003	859,349
2009	1,177,813	1.006	1,185,185
2010	972,613	1.013	984,828
2011	323,802	1.025	331,986
2012	542,610	1.051	570,386
2013	601,882	1.105	665,080
2014	925,867	1.133	1,048,660
2015	314,175	1.170	367,585
2016	667,691	1.236	824,947
2017	541,861	1.333	722,371
2018	668,154	1.506	1,006,531
2019	403,539	1.868	753,803
2020	541,959	2.709	1,467,933
2021	120,702	4.672	563,955
2022	67,322	12.849	865,010
Total	\$17,614,041		\$21,106,715

Notes:

- (2) Provided by MVRMA
- (3) Based on insurance industry development
- (4) = (2) x (3)

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Loss Development Patterns

Month of Development (1)	\$500K Limits % Developed		\$1M Limits % Developed		Industry % Developed	
	Incurred (2)	Paid (3)	Incurred (4)	Paid (5)	Incurred (6)	Paid (7)
408	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
396	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
384	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
372	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
360	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
348	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
336	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
324	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
312	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
300	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
288	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
276	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
264	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
252	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
240	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
228	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
216	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
204	100.0%	100.0%	100.0%	100.0%	99.9%	99.9%
192	100.0%	100.0%	100.0%	100.0%	99.9%	99.8%
180	100.0%	100.0%	100.0%	100.0%	99.8%	99.7%
168	100.0%	100.0%	100.0%	100.0%	99.6%	99.4%
156	100.0%	100.0%	100.0%	100.0%	99.2%	98.8%
144	100.0%	100.0%	100.0%	100.0%	98.3%	97.5%
132	100.0%	100.0%	100.0%	100.0%	96.7%	95.1%
120	100.0%	100.0%	100.0%	100.0%	93.5%	90.5%
108	100.0%	99.9%	100.0%	99.7%	92.1%	88.3%
96	100.0%	99.1%	100.0%	98.7%	90.4%	85.5%
84	99.2%	98.1%	98.8%	97.1%	88.2%	80.9%
72	98.2%	95.3%	96.9%	90.1%	84.8%	75.0%
60	94.4%	79.4%	91.3%	75.1%	79.4%	66.4%
48	85.9%	69.6%	79.7%	61.6%	70.5%	53.5%
36	70.4%	51.6%	57.9%	37.8%	57.1%	36.9%
24	41.4%	23.4%	29.9%	15.2%	40.8%	21.4%
12	17.2%	7.8%	5.8%	2.3%	21.1%	7.8%

Notes:

- (2) Based on Exhibit 13
- (3) Based on Exhibit 14
- (4) = Col (2) lagged 6 months
- (5) = Col (3) lagged 6 months
- (6)-(7) Based on insurance industry development



Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Incurred Loss at \$500K SIR																
Accident Year	Maturity (Age in Months)															
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	
1989	97,608	277,034	216,667	211,909	210,162	214,162	207,853	207,853	207,853	207,853	207,853	207,853	207,853	207,853	207,853	
1990	102,048	155,946	209,752	252,657	436,862	436,928	435,782	432,379	439,863	439,863	439,863	439,863	439,863	439,863	439,863	
1991	12,322	71,071	61,614	53,618	97,558	139,535	84,015	84,015	84,015	84,015	84,015	84,015	84,015	84,015	84,015	
1992	21,837	28,145	162,765	137,258	123,437	140,033	143,955	143,955	139,376	139,376	139,376	139,376	139,376	139,376	139,376	
1993	369,601	528,569	536,313	795,876	860,519	860,519	865,450	865,450	850,979	850,979	850,979	850,979	850,979	850,979	850,979	
1994	34,540	86,003	222,029	97,658	106,375	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065	
1995	89,788	74,221	123,230	134,129	189,397	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790	
1996	67,665	186,767	271,412	290,544	373,656	356,656	352,170	357,926	357,926	357,926	357,926	357,926	357,926	357,926	357,926	
1997	51,105	95,958	683,597	761,629	721,708	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526	
1998	36,819	222,626	279,432	552,177	568,186	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289	
1999	81,637	187,463	379,072	471,046	674,779	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094	
2000	98,597	90,655	192,961	191,743	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	
2001	89,836	282,253	445,860	522,576	522,589	522,198	522,271	497,423	497,423	497,423	497,423	497,423	497,423	497,423	497,423	
2002	256,428	309,254	644,254	792,306	1,028,490	1,078,490	1,139,677	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	
2003	50,550	134,895	273,187	306,344	259,291	276,582	269,762	269,762	269,762	269,762	269,762	269,762	269,762	269,762	269,762	
2004	46,226	88,740	255,616	385,688	441,920	453,961	511,964	511,964	511,964	511,964	511,964	511,964	511,964	511,964	511,964	
2005	108,411	258,559	529,054	475,826	486,242	536,564	541,563	857,800	857,801	857,801	857,801	857,801	857,801	857,801	857,801	
2006	92,218	278,812	408,397	637,848	685,110	960,582	935,568	915,795	915,795	915,795	915,795	915,795	915,795	915,795	915,795	
2007	70,876	146,108	259,967	319,743	323,367	312,120	312,120	312,120	312,120	312,120	312,120	312,120	312,120	312,120	312,120	
2008	113,771	206,028	764,853	813,062	830,118	819,263	856,672	856,672	856,672	856,672	856,672	856,672	856,672	856,672	856,672	
2009	66,190	226,128	501,457	803,561	1,207,206	1,164,907	1,137,677	1,137,677	1,137,677	1,137,677	1,137,677	1,137,677	1,137,677	1,137,677	1,137,677	
2010	59,101	163,276	590,658	841,098	930,152	972,613	972,613	972,613	972,613	972,613	972,613	972,613	972,613	972,613	972,613	
2011	131,480	142,329	212,573	241,549	293,869	337,771	323,802	323,802	323,802	323,802	323,802	323,802	323,802	323,802	323,802	
2012	74,182	200,841	291,664	366,664	406,294	542,610	542,610	542,610	542,610	542,610	542,610	542,610	542,610	542,610	542,610	
2013	95,338	277,389	354,313	595,409	609,641	601,882	601,882	601,882	601,882	601,882	601,882	601,882	601,882	601,882	601,882	
2014	164,985	334,063	947,515	936,190	956,190	925,867	925,867	925,867	925,867	925,867	925,867	925,867	925,867	925,867	925,867	
2015	100,820	205,275	290,795	316,031	326,031	314,175	314,175	314,175	314,175	314,175	314,175	314,175	314,175	314,175	314,175	
2016	95,425	422,586	497,960	549,522	703,508	829,023	700,320	700,320	700,320	700,320	700,320	700,320	700,320	700,320	700,320	
2017	428,285	440,936	565,884	539,851	541,861	541,861	541,861	541,861	541,861	541,861	541,861	541,861	541,861	541,861	541,861	
2018	113,533	353,848	508,031	848,085	710,603	710,603	710,603	710,603	710,603	710,603	710,603	710,603	710,603	710,603	710,603	
2019	67,442	216,356	484,556	545,803	545,803	545,803	545,803	545,803	545,803	545,803	545,803	545,803	545,803	545,803	545,803	
2020	112,107	450,877	557,418	557,418	557,418	557,418	557,418	557,418	557,418	557,418	557,418	557,418	557,418	557,418	557,418	
2021	156,925	138,791														
2022	184,839															

Age-to-Age Factors																
Accident Year	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	
1989	2.838	0.782	0.978	0.992	1.019	0.971	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1990	1.528	1.345	1.205	1.729	1.000	0.997	0.992	1.017	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1991	5.768	0.867	0.870	1.820	1.430	0.602	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1992	1.289	5.783	0.843	0.899	1.134	1.028	1.000	0.968	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1993	1.430	1.015	1.484	1.081	1.000	1.006	1.000	0.983	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1994	2.490	2.582	0.440	1.089	0.997	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1995	0.827	1.660	1.088	1.412	0.828	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1996	2.760	1.453	1.070	1.286	0.955	0.987	1.016	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1997	1.878	7.124	1.114	0.948	0.979	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1998	6.046	1.255	1.976	1.029	0.976	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1999	2.296	2.022	1.243	1.433	0.974	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2000	0.919	2.129	0.994	0.858	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2001	3.142	1.580	1.172	1.000	0.999	1.000	0.952	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2002	1.206	2.083	1.230	1.298	1.049	1.057	1.182	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2003	2.669	2.025	1.121	0.846	1.067	0.975	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2004	1.920	2.881	1.509	1.146	1.027	1.128	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2005	2.385	2.046	0.899	1.022	1.103	1.009	1.584	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2006	3.023	1.465	1.562	1.074	1.402	0.974	1.000	0.979	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2007	2.061	1.779	1.230	1.011	0.965	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2008	1.811	3.712	1.063	1.021	0.987	1.046	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2009	3.416	2.218	1.602	1.502	0.965	0.977	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2010	2.763	3.618	1.424	1.106	1.046	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2011	1.083	1.494	1.136	1.217	1.149	0.959	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2012	2.707	1.452	1.257	1.108	1.336	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2013	2.910	1.277	1.680	1.024	0.987	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2014	2.025	2.836	0.988	1.021	0.968	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2015	2.036	1.417	1.087	1.032	0.964	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2016	</															

Year	Maturity (Age in Months)																		
	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408
1989	207,853	207,853	207,853	207,853	207,853	207,853	207,853	207,853	207,853	207,853	207,853	207,853	207,853	207,853	207,853	207,853	207,853	207,853	207,853
1990	439,863	439,863	439,863	439,863	439,863	439,863	439,863	439,863	439,863	439,863	439,863	439,863	439,863	439,863	439,863	439,863	439,863	439,863	439,863
1991	84,015	84,015	84,015	84,015	84,015	84,015	84,015	84,015	84,015	84,015	84,015	84,015	84,015	84,015	84,015	84,015	84,015	84,015	84,015
1992	139,376	139,376	139,376	139,376	139,376	139,376	139,376	139,376	139,376	139,376	139,376	139,376	139,376	139,376	139,376	139,376	139,376	139,376	139,376
1993	850,979	850,979	850,979	850,979	850,979	850,979	850,979	850,979	850,979	850,979	850,979	850,979	850,979	850,979	850,979	850,979	850,979	850,979	850,979
1994	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065	106,065
1995	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790	156,790
1996	357,926	357,926	357,926	357,926	357,926	357,926	357,926	357,926	357,926	357,926	357,926	357,926	357,926	357,926	357,926	357,926	357,926	357,926	357,926
1997	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526	706,526
1998	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289	554,289
1999	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094	657,094
2000	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560	164,560
2001	497,423	497,423	497,423	497,423	497,423	497,423	497,423	497,423	497,423	497,423	497,423	497,423	497,423	497,423	497,423	497,423	497,423	497,423	497,423
2002	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177	1,347,177
2003	269,762	269,762	269,762	269,762	269,762	269,762	269,762	269,762	269,762	269,762	269,762	269,762	269,762	269,762	269,762	269,762	269,762	269,762	269,762
2004	511,964	511,964	511,964	511,964	511,964	511,964	511,964	511,964	511,964	511,964	511,964	511,964	511,964	511,964	511,964	511,964	511,964	511,964	511,964
2005	857,801	857,801																	

MVRMA Combined Analyses 2022-12-31  
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MVRMA Combined Analyses 2022-12-31  
3/30/2023 at 2:58 PM

Paid Loss at \$500K SIR

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MVRMA Combined Analyses 2022-12-31  
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Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Summary of Claim Counts

Accident Year	Closed Claims	Open Claims	Reported Claims	Indicated IBNR Claims	Selected Ultimate Claims
(1)	(2)	(3)	(4)	(5)	(6)
1989	89	0	89	0	89
1990	99	0	99	0	99
1991	56	0	56	0	56
1992	72	0	72	0	72
1993	93	0	93	0	93
1994	108	0	108	0	108
1995	85	0	85	0	85
1996	121	0	121	0	121
1997	99	0	99	0	99
1998	142	0	142	0	142
1999	142	0	142	0	142
2000	146	0	146	0	146
2001	118	0	118	0	118
2002	164	0	164	0	164
2003	148	0	148	0	148
2004	119	0	119	0	119
2005	128	0	128	0	128
2006	110	0	110	0	110
2007	143	0	143	0	143
2008	177	0	177	0	177
2009	117	0	117	0	117
2010	153	0	153	0	153
2011	186	0	186	0	186
2012	137	0	137	0	137
2013	159	0	159	0	159
2014	175	0	175	0	175
2015	147	0	147	0	147
2016	141	1	142	0	142
2017	158	0	158	0	158
2018	172	1	173	0	173
2019	137	5	142	1	143
2020	79	2	81	1	82
2021	69	3	72	2	74
2022	54	28	82	11	93
Total	4,243	40	4,283	15	4,298

Notes:

(2)-(4) Provided by MVRMA

(5) = (6) - (4)

(6) From Exhibit 16, Col (4)

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Ultimate Claims Based on Reported Claim Development Method

Accident Year	Cumulative Reported Claims	Claim Development Factors	Projected Ultimate Claims
(1)	(2)	(3)	(4)
1989	89	1.000	89
1990	99	1.000	99
1991	56	1.000	56
1992	72	1.000	72
1993	93	1.000	93
1994	108	1.000	108
1995	85	1.000	85
1996	121	1.000	121
1997	99	1.000	99
1998	142	1.000	142
1999	142	1.000	142
2000	146	1.000	146
2001	118	1.000	118
2002	164	1.000	164
2003	148	1.000	148
2004	119	1.000	119
2005	128	1.000	128
2006	110	1.000	110
2007	143	1.000	143
2008	177	1.000	177
2009	117	1.000	117
2010	153	1.000	153
2011	186	1.000	186
2012	137	1.000	137
2013	159	1.000	159
2014	175	1.000	175
2015	147	1.000	147
2016	142	1.000	142
2017	158	1.000	158
2018	173	1.002	173
2019	142	1.004	143
2020	81	1.012	82
2021	72	1.027	74
2022	82	1.130	93
Total	4,283		4,298

Notes:

- (2) Provided by MVRMA
- (3) From Exhibit 17
- (4) = (2) x (3)

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Reported Claim Counts

Accident Year	Maturity (Age in Months)														
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180
1989	78	87	88	89	89	89	89	89	89	89	89	89	89	89	89
1990	81	89	94	97	98	98	99	99	99	99	99	99	99	99	99
1991	43	51	54	54	54	56	56	56	56	56	56	56	56	56	56
1992	47	61	67	71	72	72	72	72	72	72	72	72	72	72	72
1993	70	83	89	90	91	93	93	93	93	93	93	93	93	93	93
1994	103	106	108	108	108	108	108	108	108	108	108	108	108	108	108
1995	73	78	84	85	85	85	85	85	85	85	85	85	85	85	85
1996	102	114	120	122	122	122	121	121	121	121	121	121	121	121	121
1997	85	94	99	99	99	99	99	99	99	99	99	99	99	99	99
1998	117	133	139	141	141	141	142	142	142	142	142	142	142	142	142
1999	122	133	141	141	141	142	142	142	142	142	142	142	142	142	142
2000	125	138	143	143	146	146	146	146	146	146	146	146	146	146	146
2001	105	111	115	120	120	120	120	120	118	118	118	118	118	118	118
2002	119	155	160	163	163	163	164	164	164	164	164	164	164	164	164
2003	122	142	144	145	145	148	148	148	148	148	148	148	148	148	148
2004	85	105	114	118	119	119	119	119	119	119	119	119	119	119	119
2005	111	124	128	129	129	129	129	129	128	128	128	128	128	128	128
2006	91	102	105	108	108	110	110	110	110	110	110	110	110	110	110
2007	128	142	142	143	143	143	143	143	143	143	143	143	143	143	143
2008	160	171	175	177	177	177	177	177	177	177	177	177	177	177	177
2009	102	113	117	117	117	117	117	117	117	117	117	117	117	117	117
2010	133	148	151	152	153	153	153	153	153	153	153	153	153	153	153
2011	172	181	185	185	186	186	186	186	186	186	186	186	186	186	186
2012	121	135	136	136	136	137	137	137	137	137	137	137	137	137	137
2013	137	156	159	159	159	159	159	159	159	159	159	159	159	159	159
2014	158	174	175	175	175	175	175	175	175	175	175	175	175	175	175
2015	137	144	147	147	147	147	147	147	147	147	147	147	147	147	147
2016	116	138	141	142	142	143	143	143	143	143	143	143	143	143	143
2017	147	156	154	158	158	158	158	158	158	158	158	158	158	158	158
2018	162	173	173	175	175	173	173	173	173	173	173	173	173	173	173
2019	123	136	143	142	142	142	142	142	142	142	142	142	142	142	142
2020	71	80	81												
2021	69	72													
2022	82														

Accident Year	Age-to-Age Factors															
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	
1989	1.115	1.011	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1990	1.099	1.056	1.032	1.010	1.000	1.010	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1991	1.186	1.059	1.000	1.000	1.037	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1992	1.298	1.098	1.060	1.014	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1993	1.186	1.072	1.011	1.011	1.022	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1994	1.029	1.019	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1995	1.068	1.077	1.012	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1996	1.118	1.053	1.017	1.000	1.000	0.992	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1997	1.106	1.053	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1998	1.137	1.045	1.014	1.000	1.000	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1999	1.090	1.060	1.000	1.000	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2000	1.104	1.036	1.000	1.021	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2001	1.057	1.036	1.043	1.000	1.000	1.000	1.000	0.983	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2002	1.303	1.032	1.019	1.000	1.000	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2003	1.164	1.014	1.007	1.000	1.021	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2004	1.235	1.086	1.035	1.008	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2005	1.117	1.032	1.008	1.000	1.000	1.000	1.000	0.992	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2006	1.121	1.029	1.029	1.000	1.019	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2007	1.109	1.000	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2008	1.069	1.023	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2009	1.108	1.035	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2010	1.113	1.020	1.007	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2011	1.052	1.022	1.000	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2012	1.116	1.007	1.000	1.000	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2013	1.139	1.019	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2014	1.101	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2015	1.051	1.021	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2016	1.190	1.022	1.007	1.000	1.007	0.993	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2017	1.061	0.987	1.026	1.000	1.000											
2018	1.068	1.000	1.012	0.989												
2019	1.106	1.051	0.993													
2020	1.127	1.013														
2021	1.043															
All Yr Vol	1.113	1.030	1.010	1.002	1.003	1.000	1.000	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
All Yr Vol Ex. H/L	1.109	1.031	1.010	1.002	1.003	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
10 Yr Vol	1.099	1.014	1.004	1.000	1.001	0.999	1.000	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
10 Yr Vol Ex. H/L	1.093	1.014	1.003	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
5 Yr Vol	1.079	1.013	1.008	0.997	1.001	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
5 Yr Vol Ex. H/L	1.076	1.010	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
3 Yr Vol	1.095	1.021	1.011	0.996	1.002	0.998	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Prior	1.115	1.016	1.009	1.002	1.002	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Selected	1.100	1.015	1.008	1.002	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
LDFs	1.130	1.027	1.012	1.004	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
% Developed	88.5%	97.4%	98.8%	99.6%	99.8%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

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MVRMA Combined Analyses 2022-12-31  
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Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Closed Claim Counts

Accident Year	Maturity (Age in Months)														
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180
1989	61	77	81	88	88	88	89	89	89	89	89	89	89	89	89
1990	67	82	86	91	97	97	98	99	99	99	99	99	99	99	99
1991	38	45	49	52	53	54	56	56	56	56	56	56	56	56	56
1992	41	57	60	66	69	70	71	71	72	72	72	72	72	72	72
1993	55	72	82	87	88	88	90	92	93	93	93	93	93	93	93
1994	92	102	107	108	107	107	108	108	108	108	108	108	108	108	108
1995	57	74	79	81	83	85	85	85	85	85	85	85	85	85	85
1996	88	107	114	117	120	120	120	121	121	121	121	121	121	121	121
1997	77	87	90	95	97	99	99	99	99	99	99	99	99	99	99
1998	105	123	131	136	139	141	142	142	142	142	142	142	142	142	142
1999	112	125	130	135	137	142	142	142	142	142	142	142	142	142	142
2000	110	132	136	140	146	146	146	146	146	146	146	146	146	146	146
2001	86	98	106	114	117	118	118	118	118	118	118	118	118	118	118
2002	113	147	148	153	160	160	163	163	163	163	164	164	164	164	164
2003	112	132	138	138	143	146	148	148	148	148	148	148	148	148	148
2004	77	97	100	112	117	118	119	119	119	119	119	119	119	119	119
2005	92	112	118	124	127	127	127	129	128	128	128	128	128	128	128
2006	81	93	98	102	104	106	109	109	110	110	110	110	110	110	110
2007	113	130	137	137	141	143	143	143	143	143	143	143	143	143	143
2008	148	164	167	170	175	177	177	177	177	177	177	177	177	177	177
2009	93	106	109	112	112	116	117	117	117	117	117	117	117	117	117
2010	125	142	145	148	149	153	153	153	153	153	153	153	153	153	153
2011	157	180	180	182	183	184	186	186	186	186	186	186	186	186	186
2012	106	133	134	134	134	137	137	137	137	137	137	137	137	137	137
2013	123	151	153	154	157	159	159	159	159	159	159	159	159	159	159
2014	149	168	172	173	173	174	175	175	175	175	175	175	175	175	175
2015	127	138	144	146	146	147	147	147	147	147	147	147	147	147	147
2016	102	129	135	137	139	139	141	141	141	141	141	141	141	141	141
2017	132	149	150	157	158	158	158	158	158	158	158	158	158	158	158
2018	142	164	165	172	172	172	172	172	172	172	172	172	172	172	172
2019	113	128	134	137	137	137	137	137	137	137	137	137	137	137	137
2020	62	76	79	79	79	79	79	79	79	79	79	79	79	79	79
2021	53	69	69	69	69	69	69	69	69	69	69	69	69	69	69
2022	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54

Accident	Age-to-Age Factors															
Year	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	
1989	1.262	1.052	1.086	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1990	1.224	1.049	1.058	1.066	1.000	1.010	1.010	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1991	1.184	1.089	1.061	1.019	1.019	1.037	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1992	1.390	1.053	1.100	1.045	1.014	1.014	1.000	1.014	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1993	1.309	1.139	1.061	1.011	1.000	1.023	1.022	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1994	1.109	1.049	1.009	0.991	1.000	1.009	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1995	1.298	1.068	1.025	1.025	1.024	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1996	1.216	1.065	1.026	1.026	1.000	1.000	1.008	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1997	1.130	1.034	1.056	1.021	1.021	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1998	1.171	1.065	1.038	1.022	1.014	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1999	1.116	1.040	1.038	1.015	1.036	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2000	1.200	1.030	1.029	1.043	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2001	1.140	1.082	1.075	1.026	1.009	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2002	1.301	1.007	1.034	1.046	1.000	1.019	1.000	1.000	1.000	1.006	1.000	1.000	1.000	1.000	1.000	
2003	1.179	1.045	1.000	1.036	1.021	1.014	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2004	1.260	1.031	1.120	1.045	1.009	1.008	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2005	1.217	1.054	1.051	1.024	1.000	1.000	1.016	0.992	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2006	1.148	1.054	1.041	1.020	1.019	1.028	1.000	1.009	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2007	1.150	1.054	1.000	1.029	1.014	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2008	1.108	1.018	1.018	1.029	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2009	1.140	1.028	1.028	1.000	1.036	1.009	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2010	1.136	1.021	1.021	1.007	1.027	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2011	1.146	1.000	1.011	1.005	1.005	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2012	1.255	1.008	1.000	1.000	1.022	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2013	1.228	1.013	1.007	1.019	1.013	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2014	1.128	1.024	1.006	1.000	1.006	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2015	1.087	1.043	1.014	1.000	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2016	1.265	1.047	1.015	1.015	1.000	1.014	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2017	1.129	1.007	1.047	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2018	1.155	1.006	1.042	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2019	1.133	1.047	1.022	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2020	1.226	1.039	1.039	1.039	1.039	1.039	1.039	1.039	1.039	1.039	1.039	1.039	1.039	1.039	1.039	
2021	1.302	1.302	1.302	1.302	1.302	1.302	1.302	1.302	1.302	1.302	1.302	1.302	1.302	1.302	1.302	
All Yr Vol	1.181	1.037	1.032	1.019	1.011	1.007	1.002	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
All Yr Vol Ex. H/L	1.182	1.037	1.030	1.018	1.010	1.007	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
10 Yr Vol	1.177	1.021	1.019	1.005	1.012	1.004	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
10 Yr Vol Ex. H/L	1.182	1.022	1.017	1.004	1.011	1.003	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
5 Yr Vol	1.167	1.026	1.029	1.004	1.005	1.004	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
5 Yr Vol Ex. H/L	1.161	1.028	1.028	1.002	1.004	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
3 Yr Vol	1.197	1.027	1.038	1.006	1.002	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Closed Claim Counts

Year	Maturity (Age in Months)																		
	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408
1989	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89
1990	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1991	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
1992	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72
1993	93	92	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93
1994	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108
1995	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
1996	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121
1997	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1998	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142
1999	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142
2000	146	146	146	146	146	146	146	146	146	146	146	146	146	146	146	146	146	146	146
2001	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118
2002	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164
2003	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148	148
2004	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119
2005	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
2006	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
2007	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143
2008																			
2009																			
2010																			
2011																			
2012																			
2013																			
2014																			
2015																			
2016																			
2017																			
2018																			
2019																			
2020																			
2021																			
2022																			

Accident Year	Age-to-Age Factors																		
	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	408-Ult
1989	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1990	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1991	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1992	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1993	0.989	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1994	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1995	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1996	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1997	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1998	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2003	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2004	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2007																			
2008																			
2009																			
2010																			
2011																			
2012																			
2013																			
2014																			
2015																			
2016																			
2017																			
2018																			
2019																			
2020																			
2021																			
All Yr Vol	1.000	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
All Yr Vol Ex. H/L	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10 Yr Vol	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10 Yr Vol Ex. H/L	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5 Yr Vol	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5 Yr Vol Ex. H/L	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
3 Yr Vol	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Miami Valley Risk Management Association  
General Liability  
December 31, 2022

Loss and Count Summary

Accident Year	Retention	Total Limits		Retention Limits		\$500K Limits		Deductibles		Claim Counts	
		Incurred	Paid	Incurred	Paid	Incurred	Paid	Incurred	Paid	Reported	Closed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1989	\$250,000	\$207,853	\$207,853	\$207,853	\$207,853	\$207,853	\$207,853			89	89
1990	250,000	439,863	439,863	439,863	439,863	439,863	439,863			99	99
1991	250,000	84,015	84,015	84,015	84,015	84,015	84,015			56	56
1992	250,000	139,376	139,376	139,376	139,376	139,376	139,376			72	72
1993	250,000	1,207,079	1,207,079	600,979	600,979	850,979	850,979			93	93
1994	250,000	106,065	106,065	106,065	106,065	106,065	106,065			108	108
1995	250,000	156,790	156,790	156,790	156,790	156,790	156,790			85	85
1996	250,000	357,926	357,926	357,926	357,926	357,926	357,926			121	121
1997	500,000	1,331,066	1,331,066	706,526	706,526	706,526	706,526			99	99
1998	500,000	554,289	554,289	554,289	554,289	554,289	554,289			142	142
1999	500,000	657,094	657,094	657,094	657,094	657,094	657,094			142	142
2000	500,000	164,560	164,560	164,560	164,560	164,560	164,560			146	146
2001	500,000	497,423	497,423	497,423	497,423	497,423	497,423			118	118
2002	500,000	1,566,330	1,566,330	1,347,177	1,347,177	1,347,177	1,347,177			164	164
2003	1,000,000	269,762	269,762	269,762	269,762	269,762	269,762			148	148
2004	1,000,000	511,964	511,964	511,964	511,964	511,964	511,964			119	119
2005	1,000,000	857,801	857,801	857,801	857,801	857,801	857,801			128	128
2006	1,000,000	915,795	915,795	915,795	915,795	915,795	915,795	\$55,888	\$55,888	110	110
2007	1,000,000	312,120	312,120	312,120	312,120	312,120	312,120	54,069	54,069	143	143
2008	1,000,000	856,672	856,672	856,672	856,672	856,672	856,672	71,826	71,826	177	177
2009	1,000,000	1,177,813	1,177,813	1,177,813	1,177,813	1,137,677	1,137,677	58,683	58,683	117	117
2010	500,000	1,036,784	1,036,784	972,613	972,613	972,613	972,613	68,618	68,618	153	153
2011	500,000	323,802	323,802	323,802	323,802	323,802	323,802	67,033	67,033	186	186
2012	500,000	542,610	542,610	542,610	542,610	542,610	542,610	48,604	48,604	137	137
2013	500,000	601,882	601,882	601,882	601,882	601,882	601,882	54,455	54,455	159	159
2014	500,000	2,440,030	2,440,030	925,867	925,867	925,867	925,867	72,415	72,415	175	175
2015	500,000	314,175	314,175	314,175	314,175	314,175	314,175	64,046	64,046	147	147
2016	500,000	700,320	667,691	700,320	667,691	700,320	667,691	64,852	64,852	142	141
2017	500,000	541,861	541,861	541,861	541,861	541,861	541,861	49,966	49,966	158	158
2018	500,000	710,603	668,154	710,603	668,154	710,603	668,154	61,474	61,474	173	172
2019	500,000	545,803	403,539	545,803	403,539	545,803	403,539	74,949	74,949	142	137
2020	500,000	557,418	541,959	557,418	541,959	557,418	541,959	41,258	41,258	81	79
2021	500,000	138,791	120,702	138,791	120,702	138,791	120,702	31,679	30,392	72	69
2022	500,000	184,839	67,322	184,839	67,322	184,839	67,322	76,073	35,554	82	54
Total		\$21,010,573	\$20,642,167	\$17,982,447	\$17,614,041	\$18,192,311	\$17,823,905	\$1,015,887	\$974,081	4,283	4,243

Notes:

(2)-(12) Provided by MVRMA

Property and Auto Physical Damage  
Exhibit 1

Miami Valley Risk Management Association  
Property and Auto Physical Damage  
December 31, 2022

Summary of Loss Reserve Estimates  
Retained Limits

Accident Year	Selected Ultimate Loss	Incurred Loss	Paid Loss	Case Reserves	Indicated IBNR	Estimated Total Reserves
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1989	\$124,141	\$124,141	\$124,141	\$0	\$0	\$0
1990	32,734	32,734	32,734	0	0	0
1991	75,626	75,626	75,626	0	0	0
1992	63,858	63,858	63,858	0	0	0
1993	63,660	63,660	63,660	0	0	0
1994	96,833	96,833	96,833	0	0	0
1995	85,639	85,639	85,639	0	0	0
1996	92,901	92,901	92,901	0	0	0
1997	225,205	225,205	225,205	0	0	0
1998	135,150	135,150	135,150	0	0	0
1999	392,466	392,466	392,466	0	0	0
2000	130,204	130,204	130,204	0	0	0
2001	505,931	505,931	505,931	0	0	0
2002	369,496	369,496	369,496	0	0	0
2003	265,463	265,463	265,463	0	0	0
2004	229,621	229,621	229,621	0	0	0
2005	369,470	369,470	369,470	0	0	0
2006	497,206	497,206	497,206	0	0	0
2007	405,891	405,891	405,891	0	0	0
2008	654,562	654,562	654,562	0	0	0
2009	324,515	324,515	324,515	0	0	0
2010	389,384	389,384	389,384	0	0	0
2011	879,940	879,940	879,940	0	0	0
2012	559,108	559,108	559,108	0	0	0
2013	582,706	582,706	582,706	0	0	0
2014	1,162,693	1,162,693	1,162,693	0	0	0
2015	651,268	651,268	651,268	0	0	0
2016	448,203	448,203	448,203	0	0	0
2017	607,680	607,680	607,680	0	0	0
2018	594,000	591,312	571,312	20,000	2,688	22,688
2019	839,639	839,639	839,639	0	0	0
2020	1,074,816	1,074,816	1,074,816	0	0	0
2021	1,054,000	1,048,489	976,614	71,875	5,511	77,386
2022	1,071,000	888,335	565,640	322,695	182,665	505,360
Total	\$15,055,010	\$14,864,146	\$14,449,576	\$414,571	\$190,864	\$605,434

Notes:

- (2) From Exhibit 4, Col (8)  
(3)-(5) Provided by MVRMA  
(6) = (2) - (3)  
(7) = (5) + (6)

Property and Auto Physical Damage  
Exhibit 2

Miami Valley Risk Management Association  
Property and Auto Physical Damage  
December 31, 2022

Ultimate Average Indications  
Retained Limits

Accident Year	Selected Ultimate Loss	Property Values (\$00,000's)	Selected Ultimate Claims	Ultimate Claims per \$10M Prop.	Ultimate Loss per \$100K Prop.	Ultimate Loss per Claim
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1989	\$124,141		17			\$7,302
1990	32,734		22			1,488
1991	75,626		27			2,801
1992	63,858		24			2,661
1993	63,660		28			2,274
1994	96,833	\$1,446	44	3.0	\$67	2,201
1995	85,639	1,578	68	4.3	54	1,259
1996	92,901	1,824	92	5.0	51	1,010
1997	225,205	2,140	88	4.1	105	2,559
1998	135,150	2,648	114	4.3	51	1,186
1999	392,466	2,482	154	6.2	158	2,548
2000	130,204	2,679	159	5.9	49	819
2001	505,931	3,002	131	4.4	169	3,862
2002	369,496	3,429	150	4.4	108	2,463
2003	265,463	4,680	185	4.0	57	1,435
2004	229,621	5,300	178	3.4	43	1,290
2005	369,470	6,898	169	2.4	54	2,186
2006	497,206	7,692	173	2.2	65	2,874
2007	405,891	8,105	163	2.0	50	2,490
2008	654,562	8,444	176	2.1	78	3,719
2009	324,515	9,250	173	1.9	35	1,876
2010	389,384	9,251	137	1.5	42	2,842
2011	879,940	10,188	184	1.8	86	4,782
2012	559,108	10,479	180	1.7	53	3,106
2013	582,706	10,778	170	1.6	54	3,428
2014	1,162,693	11,074	169	1.5	105	6,880
2015	651,268	11,132	171	1.5	59	3,809
2016	448,203	11,808	172	1.5	38	2,606
2017	607,680	12,352	168	1.4	49	3,617
2018	594,000	13,185	194	1.5	45	3,062
2019	839,639	13,876	119	0.9	61	7,056
2020	1,074,816	15,366	143	0.9	70	7,516
2021	1,054,000	16,278	160	1.0	65	6,588
2022	1,071,000	16,777	146	0.9	64	7,336
Total	\$15,055,010		4,448			\$3,385
1994-2022	14,694,991	\$234,139	4,330	1.8	\$63	3,394

Notes:

- (2) From Exhibit 4, Col (8)
- (3) Provided by MVRMA
- (4) From Exhibit 11, Col (6)
- (5) = (4) / (3) x 100
- (6) = (2) / (3)
- (7) = (2) / (4)

Property and Auto Physical Damage  
Exhibit 3

Miami Valley Risk Management Association  
Property and Auto Physical Damage  
December 31, 2022

Comparison of Ultimate Loss to Prior Ultimate Loss  
Retained Limits

Accident Year	Selected Ultimate Loss @ 12/31/2021	Selected Ultimate Loss @ 12/31/2022	Difference	Percent Change
(1)	(2)	(3)	(4)	(5)
1989	\$124,141	\$124,141	\$0	0.0%
1990	32,734	32,734	0	0.0%
1991	75,626	75,626	0	0.0%
1992	63,858	63,858	0	0.0%
1993	63,660	63,660	0	0.0%
1994	96,833	96,833	0	0.0%
1995	85,639	85,639	0	0.0%
1996	92,901	92,901	0	0.0%
1997	225,205	225,205	0	0.0%
1998	135,150	135,150	0	0.0%
1999	392,466	392,466	0	0.0%
2000	130,204	130,204	0	0.0%
2001	505,931	505,931	0	0.0%
2002	369,496	369,496	0	0.0%
2003	265,463	265,463	0	0.0%
2004	229,621	229,621	0	0.0%
2005	369,470	369,470	0	0.0%
2006	497,206	497,206	0	0.0%
2007	405,891	405,891	0	0.0%
2008	654,562	654,562	0	0.0%
2009	324,515	324,515	0	0.0%
2010	389,384	389,384	0	0.0%
2011	879,940	879,940	0	0.0%
2012	559,108	559,108	0	0.0%
2013	582,706	582,706	0	0.0%
2014	1,162,693	1,162,693	0	0.0%
2015	651,268	651,268	0	0.0%
2016	448,203	448,203	0	0.0%
2017	607,680	607,680	0	0.0%
2018	571,312	594,000	22,688	4.0%
2019	847,000	839,639	(7,361)	-0.9%
2020	1,077,000	1,074,816	(2,184)	-0.2%
2021	1,412,000	1,054,000	(358,000)	-25.4%
Total	\$14,328,867	\$13,984,010	(\$344,857)	-2.4%

Notes:

- (2) From Pinnacle's analysis of unpaid loss & LAE at 12/31/2021
- (3) From Exhibit 4, Col (8)
- (4) = (3) - (2)
- (5) = (4) / (2)

Miami Valley Risk Management Association  
Property and Auto Physical Damage  
December 31, 2022

Selected Ultimate Loss  
Retained Limits

Accident Year	Retention	Industry Development		MVRMA's Loss Development			Selected Ultimate Loss
		Incurred Loss Method	Paid Loss Method	Incurred Loss Method	Paid Loss Method	Case Reserve Method	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1989	\$250,000	\$124,141	\$124,141	\$124,141	\$124,141	\$124,141	\$124,141
1990	250,000	32,734	32,734	32,734	32,734	32,734	32,734
1991	250,000	75,626	75,626	75,626	75,626	75,626	75,626
1992	250,000	63,858	63,858	63,858	63,858	63,858	63,858
1993	250,000	63,660	63,660	63,660	63,660	63,660	63,660
1994	100,000	96,833	96,833	96,833	96,833	96,833	96,833
1995	150,000	85,639	85,639	85,639	85,639	85,639	85,639
1996	250,000	92,901	92,901	92,901	92,901	92,901	92,901
1997	250,000	225,205	225,205	225,205	225,205	225,205	225,205
1998	250,000	135,150	135,150	135,150	135,150	135,150	135,150
1999	150,000	392,466	392,466	392,466	392,466	392,466	392,466
2000	150,000	130,204	130,204	130,204	130,204	130,204	130,204
2001	150,000	505,931	505,931	505,931	505,931	505,931	505,931
2002	250,000	369,496	369,496	369,496	369,496	369,496	369,496
2003	250,000	265,463	265,463	265,463	265,463	265,463	265,463
2004	250,000	229,621	229,621	229,621	229,621	229,621	229,621
2005	200,000	369,470	369,470	369,470	369,470	369,470	369,470
2006	200,000	497,206	497,206	497,206	497,206	497,206	497,206
2007	200,000	405,891	405,891	405,891	405,891	405,891	405,891
2008	200,000	654,565	654,574	654,562	654,562	654,562	654,562
2009	200,000	324,518	324,527	324,515	324,515	324,515	324,515
2010	250,000	389,391	389,412	389,384	389,384	389,384	389,384
2011	250,000	879,973	880,069	879,940	879,940	879,940	879,940
2012	250,000	559,150	559,272	559,108	559,108	559,108	559,108
2013	250,000	582,794	583,049	582,706	582,706	582,706	582,706
2014	250,000	1,163,045	1,164,060	1,162,693	1,162,693	1,162,693	1,162,693
2015	250,000	651,662	652,801	651,268	651,268	651,268	651,268
2016	250,000	448,745	450,315	448,203	448,203	448,203	448,203
2017	250,000	609,150	613,420	607,680	607,680	607,680	607,680
2018	250,000	594,178	582,156	591,312	571,312	591,312	594,000
2019	250,000	847,797	871,817	839,639	839,639	839,639	839,639
2020	250,000	1,095,802	1,158,774	1,074,816	1,074,816	1,074,816	1,074,816
2021	250,000	1,089,833	1,135,148	1,053,732	1,005,912	1,063,296	1,054,000
2022	250,000	1,076,619	981,323	1,071,332	961,305	1,117,260	1,071,000
Total		\$15,128,719	\$15,162,214	\$15,052,386	\$14,874,539	\$15,107,878	\$15,055,010

- Notes:
- (2) Provided by MVRMA
  - (3) From Exhibit 8.1, Col (4)
  - (4) From Exhibit 8.2, Col (4)
  - (5) From Exhibit 5, Col (4)
  - (6) From Exhibit 6, Col (4)
  - (7) From Exhibit 7, Col (8)

Property and Auto Physical Damage  
Exhibit 5

Miami Valley Risk Management Association  
Property and Auto Physical Damage  
December 31, 2022

Ultimate Loss Based on Incurred Loss Development Method  
Retained Limits

Accident Year (1)	Cumulative Incurred Loss (2)	Loss Development Factors (3)	Projected Ultimate Loss (4)
1989	\$124,141	1.000	\$124,141
1990	32,734	1.000	32,734
1991	75,626	1.000	75,626
1992	63,858	1.000	63,858
1993	63,660	1.000	63,660
1994	96,833	1.000	96,833
1995	85,639	1.000	85,639
1996	92,901	1.000	92,901
1997	225,205	1.000	225,205
1998	135,150	1.000	135,150
1999	392,466	1.000	392,466
2000	130,204	1.000	130,204
2001	505,931	1.000	505,931
2002	369,496	1.000	369,496
2003	265,463	1.000	265,463
2004	229,621	1.000	229,621
2005	369,470	1.000	369,470
2006	497,206	1.000	497,206
2007	405,891	1.000	405,891
2008	654,562	1.000	654,562
2009	324,515	1.000	324,515
2010	389,384	1.000	389,384
2011	879,940	1.000	879,940
2012	559,108	1.000	559,108
2013	582,706	1.000	582,706
2014	1,162,693	1.000	1,162,693
2015	651,268	1.000	651,268
2016	448,203	1.000	448,203
2017	607,680	1.000	607,680
2018	591,312	1.000	591,312
2019	839,639	1.000	839,639
2020	1,074,816	1.000	1,074,816
2021	1,048,489	1.005	1,053,732
2022	888,335	1.206	1,071,332
Total	\$14,864,146		\$15,052,386

Notes:

- (2) Provided by MVRMA
- (3) From Exhibit 9
- (4) = (2) x (3)



Property and Auto Physical Damage  
Exhibit 6

Miami Valley Risk Management Association  
Property and Auto Physical Damage  
December 31, 2022

Ultimate Loss Based on Paid Loss Development Method  
Retained Limits

Accident Year (1)	Cumulative Paid Loss (2)	Loss Development Factors (3)	Projected Ultimate Loss (4)
1989	\$124,141	1.000	\$124,141
1990	32,734	1.000	32,734
1991	75,626	1.000	75,626
1992	63,858	1.000	63,858
1993	63,660	1.000	63,660
1994	96,833	1.000	96,833
1995	85,639	1.000	85,639
1996	92,901	1.000	92,901
1997	225,205	1.000	225,205
1998	135,150	1.000	135,150
1999	392,466	1.000	392,466
2000	130,204	1.000	130,204
2001	505,931	1.000	505,931
2002	369,496	1.000	369,496
2003	265,463	1.000	265,463
2004	229,621	1.000	229,621
2005	369,470	1.000	369,470
2006	497,206	1.000	497,206
2007	405,891	1.000	405,891
2008	654,562	1.000	654,562
2009	324,515	1.000	324,515
2010	389,384	1.000	389,384
2011	879,940	1.000	879,940
2012	559,108	1.000	559,108
2013	582,706	1.000	582,706
2014	1,162,693	1.000	1,162,693
2015	651,268	1.000	651,268
2016	448,203	1.000	448,203
2017	607,680	1.000	607,680
2018	571,312	1.000	571,312
2019	839,639	1.000	839,639
2020	1,074,816	1.000	1,074,816
2021	976,614	1.030	1,005,912
2022	565,640	1.700	961,305
Total	\$14,449,576		\$14,874,539

Notes:

- (2) Provided by MVRMA
- (3) From Exhibit 10
- (4) = (2) x (3)

Miami Valley Risk Management Association  
Property and Auto Physical Damage  
December 31, 2022

Ultimate Loss Based on Case Reserve Development Method  
Retained Limits

Accident Year	Retention	Cumulative Paid Loss	Case Reserves	Percent Developed			Projected Ultimate Loss
				Inurred	Paid	Reserve	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1989	\$250,000	\$124,141	\$0	100.0%	100.0%	100.0%	\$124,141
1990	250,000	32,734	0	100.0%	100.0%	100.0%	32,734
1991	250,000	75,626	0	100.0%	100.0%	100.0%	75,626
1992	250,000	63,858	0	100.0%	100.0%	100.0%	63,858
1993	250,000	63,660	0	100.0%	100.0%	100.0%	63,660
1994	100,000	96,833	0	100.0%	100.0%	100.0%	96,833
1995	150,000	85,639	0	100.0%	100.0%	100.0%	85,639
1996	250,000	92,901	0	100.0%	100.0%	100.0%	92,901
1997	250,000	225,205	0	100.0%	100.0%	100.0%	225,205
1998	250,000	135,150	0	100.0%	100.0%	100.0%	135,150
1999	150,000	392,466	0	100.0%	100.0%	100.0%	392,466
2000	150,000	130,204	0	100.0%	100.0%	100.0%	130,204
2001	150,000	505,931	0	100.0%	100.0%	100.0%	505,931
2002	250,000	369,496	0	100.0%	100.0%	100.0%	369,496
2003	250,000	265,463	0	100.0%	100.0%	100.0%	265,463
2004	250,000	229,621	0	100.0%	100.0%	100.0%	229,621
2005	200,000	369,470	0	100.0%	100.0%	100.0%	369,470
2006	200,000	497,206	0	100.0%	100.0%	100.0%	497,206
2007	200,000	405,891	0	100.0%	100.0%	100.0%	405,891
2008	200,000	654,562	0	100.0%	100.0%	100.0%	654,562
2009	200,000	324,515	0	100.0%	100.0%	100.0%	324,515
2010	250,000	389,384	0	100.0%	100.0%	100.0%	389,384
2011	250,000	879,940	0	100.0%	100.0%	100.0%	879,940
2012	250,000	559,108	0	100.0%	100.0%	100.0%	559,108
2013	250,000	582,706	0	100.0%	100.0%	100.0%	582,706
2014	250,000	1,162,693	0	100.0%	100.0%	100.0%	1,162,693
2015	250,000	651,268	0	100.0%	100.0%	100.0%	651,268
2016	250,000	448,203	0	100.0%	100.0%	100.0%	448,203
2017	250,000	607,680	0	100.0%	100.0%	100.0%	607,680
2018	250,000	571,312	20,000	100.0%	100.0%	100.0%	591,312
2019	250,000	839,639	0	100.0%	100.0%	100.0%	839,639
2020	250,000	1,074,816	0	100.0%	100.0%	100.0%	1,074,816
2021	250,000	976,614	71,875	99.5%	97.1%	82.9%	1,063,296
2022	250,000	565,640	322,695	82.9%	58.8%	58.5%	1,117,260
Total		\$14,449,576	\$414,571				\$15,107,878

Notes:

- (2)-(4) Provided by MVRMA
- (5) Based on Exhibit 5, Col (3)
- (6) Based on Exhibit 6, Col (3)
- (7) = [(5) - (6)] / [(1.0 - (6))]
- (8) = (3) + [(4) / (7)]

Property and Auto Physical Damage

Exhibit 8.1

Miami Valley Risk Management Association  
Property and Auto Physical Damage  
December 31, 2022

Ultimate Loss Based on Incurred Loss Development Method Using Industry Factors  
Retained Limits

Accident Year	Cumulative Incurred Loss	Industry Loss Development Factors	Projected Ultimate Loss
(1)	(2)	(3)	(4)
1989	\$124,141	1.000	\$124,141
1990	32,734	1.000	32,734
1991	75,626	1.000	75,626
1992	63,858	1.000	63,858
1993	63,660	1.000	63,660
1994	96,833	1.000	96,833
1995	85,639	1.000	85,639
1996	92,901	1.000	92,901
1997	225,205	1.000	225,205
1998	135,150	1.000	135,150
1999	392,466	1.000	392,466
2000	130,204	1.000	130,204
2001	505,931	1.000	505,931
2002	369,496	1.000	369,496
2003	265,463	1.000	265,463
2004	229,621	1.000	229,621
2005	369,470	1.000	369,470
2006	497,206	1.000	497,206
2007	405,891	1.000	405,891
2008	654,562	1.000	654,565
2009	324,515	1.000	324,518
2010	389,384	1.000	389,391
2011	879,940	1.000	879,973
2012	559,108	1.000	559,150
2013	582,706	1.000	582,794
2014	1,162,693	1.000	1,163,045
2015	651,268	1.001	651,662
2016	448,203	1.001	448,745
2017	607,680	1.002	609,150
2018	591,312	1.005	594,178
2019	839,639	1.010	847,797
2020	1,074,816	1.020	1,095,802
2021	1,048,489	1.039	1,089,833
2022	888,335	1.212	1,076,619
Total	\$14,864,146		\$15,128,719

Notes:

- (2) Provided by MVRMA
- (3) Based on insurance industry development
- (4) = (2) x (3)

Property and Auto Physical Damage

Exhibit 8.2

Miami Valley Risk Management Association  
Property and Auto Physical Damage  
December 31, 2022

Ultimate Loss Based on Paid Loss Development Method Using Industry Factors  
Retained Limits

Accident Year	Cumulative Paid Loss	Industry Loss Development Factors	Projected Ultimate Loss
(1)	(2)	(3)	(4)
1989	\$124,141	1.000	\$124,141
1990	32,734	1.000	32,734
1991	75,626	1.000	75,626
1992	63,858	1.000	63,858
1993	63,660	1.000	63,660
1994	96,833	1.000	96,833
1995	85,639	1.000	85,639
1996	92,901	1.000	92,901
1997	225,205	1.000	225,205
1998	135,150	1.000	135,150
1999	392,466	1.000	392,466
2000	130,204	1.000	130,204
2001	505,931	1.000	505,931
2002	369,496	1.000	369,496
2003	265,463	1.000	265,463
2004	229,621	1.000	229,621
2005	369,470	1.000	369,470
2006	497,206	1.000	497,206
2007	405,891	1.000	405,891
2008	654,562	1.000	654,574
2009	324,515	1.000	324,527
2010	389,384	1.000	389,412
2011	879,940	1.000	880,069
2012	559,108	1.000	559,272
2013	582,706	1.001	583,049
2014	1,162,693	1.001	1,164,060
2015	651,268	1.002	652,801
2016	448,203	1.005	450,315
2017	607,680	1.009	613,420
2018	571,312	1.019	582,156
2019	839,639	1.038	871,817
2020	1,074,816	1.078	1,158,774
2021	976,614	1.162	1,135,148
2022	565,640	1.735	981,323
Total	\$14,449,576		\$15,162,214

Notes:

- (2) Provided by MVRMA
- (3) Based on insurance industry development
- (4) = (2) x (3)

[illegible]

MVRMA Combined Analyses 2022-12-31  
3/30/2023 at 2:58 PM

Incurred Loss at \$250K SIR

MA Combined Analyses 2022-12-31  
2023 at 2:58 PM

[illegible]

MVRMA Combined Analyses 2022-12-31  
3/30/2023 at 2:58 PM

Paid Loss at \$250K SIR

VRMA Combined Analyses 2022-12-31  
30/2023 at 2:58 PM



Miami Valley Risk Management Association  
Property and Auto Physical Damage  
December 31, 2022

Summary of Claim Counts

Accident Year	Closed Claims	Open Claims	Reported Claims	Indicated IBNR Claims	Selected Ultimate Claims
(1)	(2)	(3)	(4)	(5)	(6)
1989	17	0	17	0	17
1990	22	0	22	0	22
1991	27	0	27	0	27
1992	24	0	24	0	24
1993	28	0	28	0	28
1994	44	0	44	0	44
1995	68	0	68	0	68
1996	92	0	92	0	92
1997	88	0	88	0	88
1998	114	0	114	0	114
1999	154	0	154	0	154
2000	159	0	159	0	159
2001	131	0	131	0	131
2002	150	0	150	0	150
2003	185	0	185	0	185
2004	178	0	178	0	178
2005	169	0	169	0	169
2006	173	0	173	0	173
2007	163	0	163	0	163
2008	176	0	176	0	176
2009	173	0	173	0	173
2010	137	0	137	0	137
2011	184	0	184	0	184
2012	180	0	180	0	180
2013	170	0	170	0	170
2014	169	0	169	0	169
2015	171	0	171	0	171
2016	172	0	172	0	172
2017	168	0	168	0	168
2018	193	1	194	0	194
2019	118	1	119	0	119
2020	143	0	143	0	143
2021	144	15	159	1	160
2022	78	57	135	11	146
Total	4,362	74	4,436	12	4,448

## Notes:

(2)-(4) Provided by MVRMA

(5) = (6) - (4)

(6) From Exhibit 12, Col (4)

## Property and Auto Physical Damage

Exhibit 12

## Miami Valley Risk Management Association

## Property and Auto Physical Damage

December 31, 2022

## Ultimate Claims Based on Reported Claim Development Method

Accident Year	Cumulative Reported Claims	Claim Development Factors	Projected Ultimate Claims
(1)	(2)	(3)	(4)
1989	17	1.000	17
1990	22	1.000	22
1991	27	1.000	27
1992	24	1.000	24
1993	28	1.000	28
1994	44	1.000	44
1995	68	1.000	68
1996	92	1.000	92
1997	88	1.000	88
1998	114	1.000	114
1999	154	1.000	154
2000	159	1.000	159
2001	131	1.000	131
2002	150	1.000	150
2003	185	1.000	185
2004	178	1.000	178
2005	169	1.000	169
2006	173	1.000	173
2007	163	1.000	163
2008	176	1.000	176
2009	173	1.000	173
2010	137	1.000	137
2011	184	1.000	184
2012	180	1.000	180
2013	170	1.000	170
2014	169	1.000	169
2015	171	1.000	171
2016	172	1.000	172
2017	168	1.000	168
2018	194	1.000	194
2019	119	1.000	119
2020	143	1.000	143
2021	159	1.005	160
2022	135	1.080	146
Total	4,436		4,448

## Notes:

(2) Provided by MVRMA

(3) From Exhibit 13

(4) = (2) x (3)

Miami Valley Risk Management Association  
Property and Auto Physical Damage  
December 31, 2022

Reported Claim Counts															
Accident Year	Maturity (Age in Months)														
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180
1989	15	17	17	17	17	17	17	17	17	17	17	17	17	17	17
1990	21	22	22	22	22	22	22	22	22	22	22	22	22	22	22
1991	23	26	26	27	27	27	27	27	27	27	27	27	27	27	27
1992	21	24	24	24	24	24	24	24	24	24	24	24	24	24	24
1993	26	28	28	28	28	28	28	28	28	28	28	28	28	28	28
1994	42	43	44	44	44	44	44	44	44	44	44	44	44	44	44
1995	64	68	68	68	68	68	68	68	68	68	68	68	68	68	68
1996	83	92	92	92	92	92	92	92	92	92	92	92	92	92	92
1997	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
1998	109	114	114	114	114	114	114	114	114	114	114	114	114	114	114
1999	148	154	154	154	154	154	154	154	154	154	154	154	154	154	154
2000	157	159	159	159	159	159	159	159	159	159	159	159	159	159	159
2001	124	131	131	131	131	131	131	131	131	131	131	131	131	131	131
2002	136	150	150	150	150	150	150	150	150	150	150	150	150	150	150
2003	175	185	185	185	185	185	185	185	185	185	185	185	185	185	185
2004	156	178	178	178	178	178	178	178	178	178	178	178	178	178	178
2005	149	169	169	169	169	169	169	169	169	169	169	169	169	169	169
2006	162	173	173	173	173	173	173	173	173	173	173	173	173	173	173
2007	150	163	163	163	163	163	163	163	163	163	163	163	163	163	163
2008	166	176	176	176	176	176	176	176	176	176	176	176	176	176	176
2009	164	173	173	173	173	173	173	173	173	173	173	173	173	173	173
2010	123	137	137	137	137	137	137	137	137	137	137	137	137	137	137
2011	171	184	184	184	184	184	184	184	184	184	184	184	184	184	184
2012	171	180	180	180	180	180	180	180	180	180	180	180	180	180	180
2013	158	169	169	169	169	170	170	170	170	170	170	170	170	170	170
2014	163	169	169	169	169	169	169	169	169	169	169	169	169	169	169
2015	158	169	171	171	171	171	171	171	171	171	171	171	171	171	171
2016	164	172	172	172	172	172	172	172	172	172	172	172	172	172	172
2017	157	167	171	168	168	168	168	168	168	168	168	168	168	168	168
2018	183	192	193	193	194	194	194	194	194	194	194	194	194	194	194
2019	107	119	120	119	119	119	119	119	119	119	119	119	119	119	119
2020	128	142	143	143	143	143	143	143	143	143	143	143	143	143	143
2021	148	159	159	159	159	159	159	159	159	159	159	159	159	159	159
2022	135														

Accident Year	Age-to-Age Factors														
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192
1989	1.133	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1990	1.048	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1991	1.130	1.000	1.038	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1992	1.143	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1993	1.077	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1994	1.024	1.023	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1995	1.063	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1996	1.108	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1997	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1998	1.046	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1999	1.041	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2000	1.013	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2001	1.056	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2002	1.103	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2003	1.057	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2004	1.141	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2005	1.134	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2006	1.068	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2007	1.087	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2008	1.060	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2009	1.055	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2010	1.114	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2011	1.076	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2012	1.053	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2013	1.070	1.000	1.000	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2014	1.037	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2015	1.070	1.012	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2016	1.049	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2017	1.064	1.024	0.982	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2018	1.049	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2019	1.112	1.008	0.992	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2020	1.109	1.007													
2021	1.074														

All Yr Vol	1.070	1.002	0.999	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
All Yr Vol Ex. H/L	1.072	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10 Yr Vol	1.066	1.005	0.998	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10 Yr Vol Ex. H/L	1.066	1.004	0.999	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5 Yr Vol	1.077	1.009	0.995	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5 Yr Vol Ex. H/L	1.081	1.007	0.998	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
3 Yr Vol	1.097	1.007	0.992	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Prior	1.065	1.004	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	1.075	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
LDFs	1.080	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
% Developed	92.6%	99.5%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

### Reported Claim Counts

MA Combined Analyses 2022-12-31  
2023 at 2:58 PM

Miami Valley Risk Management Association  
Property and Auto Physical Damage  
December 31, 2022

Closed Claim Counts

Accident	Maturity (Age in Months)														
Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180
1989	10	15	17	17	17	17	17	17	17	17	17	17	17	17	17
1990	17	21	21	22	22	22	22	22	22	22	22	22	22	22	22
1991	17	24	26	27	27	27	27	27	27	27	27	27	27	27	27
1992	12	23	24	24	24	24	24	24	24	24	24	24	24	24	24
1993	22	25	28	28	28	28	28	28	28	28	28	28	28	28	28
1994	36	43	44	44	44	44	44	44	44	44	44	44	44	44	44
1995	52	68	68	68	68	68	68	68	68	68	68	68	68	68	68
1996	70	92	92	92	92	92	92	92	92	92	92	92	92	92	92
1997	76	88	88	88	88	88	88	88	88	88	88	88	88	88	88
1998	99	114	114	114	114	114	114	114	114	114	114	114	114	114	114
1999	130	153	154	154	154	154	154	154	154	154	154	154	154	154	154
2000	124	159	159	159	159	159	159	159	159	159	159	159	159	159	159
2001	107	130	131	131	131	131	131	131	131	131	131	131	131	131	131
2002	120	150	149	150	150	150	150	150	150	150	150	150	150	150	150
2003	148	185	185	185	185	185	185	185	185	185	185	185	185	185	185
2004	131	178	178	178	178	178	178	178	178	178	178	178	178	178	178
2005	129	169	169	169	169	169	169	169	169	169	169	169	169	169	169
2006	128	173	173	173	173	173	173	173	173	173	173	173	173	173	173
2007	123	162	163	163	163	163	163	163	163	163	163	163	163	163	163
2008	166	176	176	176	176	176	176	176	176	176	176	176	176	176	176
2009	147	173	173	173	173	173	173	173	173	173	173	173	173	173	173
2010	95	137	137	137	137	137	137	137	137	137	137	137	137	137	137
2011	142	183	183	184	184	184	184	184	184	184	184	184	184	184	184
2012	135	179	179	180	180	180	180	180	180	180	180	180	180	180	180
2013	132	168	169	169	170	170	170	170	170	170	170	170	170	170	170
2014	127	168	169	169	169	169	169	169	169	169	169	169	169	169	169
2015	121	168	171	171	171	171	171	171	171	171	171	171	171	171	171
2016	125	171	171	172	172	172	172	172	172	172	172	172	172	172	172
2017	106	164	171	167	168	168	168	168	168	168	168	168	168	168	168
2018	147	192	191	193	193	193	193	193	193	193	193	193	193	193	193
2019	79	119	118	118	118	118	118	118	118	118	118	118	118	118	118
2020	84	115	143	143	143	143	143	143	143	143	143	143	143	143	143
2021	75	144	144	144	144	144	144	144	144	144	144	144	144	144	144
2022	78	144	144	144	144	144	144	144	144	144	144	144	144	144	144

Accident	Age-to-Age Factors														
Year	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192
1989	1.500	1.133	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1990	1.235	1.000	1.048	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1991	1.412	1.083	1.038	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1992	1.917	1.043	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1993	1.136	1.120	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1994	1.194	1.023	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1995	1.308	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1996	1.314	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1997	1.158	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1998	1.152	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1999	1.177	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2000	1.282	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2001	1.215	1.008	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2002	1.250	0.993	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2003	1.250	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2004	1.359	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2005	1.310	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2006	1.352	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2007	1.317	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2008	1.060	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2009	1.177	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2010	1.442	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2011	1.289	1.000	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2012	1.326	1.000	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2013	1.273	1.006	1.000	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2014	1.323	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2015	1.388	1.018	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2016	1.368	1.000	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2017	1.547	1.043	0.977	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2018	1.306	0.995	1.010	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2019	1.506	0.992	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2020	1.369	1.243	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2021	1.920	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
All Yr Vol	1.308	1.012	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
All Yr Vol Ex. H/L	1.307	1.006	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10 Yr Vol	1.404	1.023	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10 Yr Vol Ex. H/L	1.381	1.008	1.002	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5 Yr Vol	1.495	1.043	0.999	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5 Yr Vol Ex. H/L	1.480	1.011	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
3 Yr Vol	1.588	1.061	0.996	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Miami Valley Risk Management Association  
Property and Auto Physical Damage  
December 31, 2022

Closed Claim Counts

Accident Year	Maturity (Age in Months)																		
1989	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
1990	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
1991	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
1992	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
1993	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
1994	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
1995	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68
1996	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92
1997	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
1998	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114
1999	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154
2000	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159
2001	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
2002	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
2003	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185
2004	178	178	178	178	178	178	178	178	178	178	178	178	178	178	178	178	178	178	178
2005	169	169	169	169	169	169	169	169	169	169	169	169	169	169	169	169	169	169	169
2006	173	173	173	173	173	173	173	173	173	173	173	173	173	173	173	173	173	173	173
2007	163	163	163	163	163	163	163	163	163	163	163	163	163	163	163	163	163	163	163
2008																			
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2021																			
2022																			

Accident Year	Age-to-Age Factors																		
	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	408-Ult
1989	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1990	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1991	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1992	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1993	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1994	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1995	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1996	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1997	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1998	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2003	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2004	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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All Yr Vol	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
All Yr Vol Ex. H/L	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10 Yr Vol	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10 Yr Vol Ex. H/L	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5 Yr Vol	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5 Yr Vol Ex. H/L	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
3 Yr Vol	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Miami Valley Risk Management Association  
Property and Auto Physical Damage  
December 31, 2022

Loss and Count Summary

Accident Year	Retention	Total Limits		Retention Limits		Deductibles		Claim Counts	
		Incurred	Paid	Incurred	Paid	Incurred	Paid	Reported	Closed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1989	\$250,000	\$124,141	\$124,141	\$124,141	\$124,141			17	17
1990	250,000	32,734	32,734	32,734	32,734			22	22
1991	250,000	75,626	75,626	75,626	75,626			27	27
1992	250,000	63,858	63,858	63,858	63,858			24	24
1993	250,000	63,660	63,660	63,660	63,660			28	28
1994	100,000	96,833	96,833	96,833	96,833			44	44
1995	150,000	85,639	85,639	85,639	85,639			68	68
1996	250,000	92,901	92,901	92,901	92,901			92	92
1997	250,000	225,205	225,205	225,205	225,205			88	88
1998	250,000	135,150	135,150	135,150	135,150			114	114
1999	150,000	541,763	541,763	392,466	392,466			154	154
2000	150,000	130,204	130,204	130,204	130,204			159	159
2001	150,000	505,931	505,931	505,931	505,931			131	131
2002	250,000	369,496	369,496	369,496	369,496			150	150
2003	250,000	265,463	265,463	265,463	265,463			185	185
2004	250,000	229,621	229,621	229,621	229,621			178	178
2005	200,000	369,470	369,470	369,470	369,470			169	169
2006	200,000	497,206	497,206	497,206	497,206	\$103,904	\$103,904	173	173
2007	200,000	405,891	405,891	405,891	405,891	101,827	101,827	163	163
2008	*	774,978	774,978	654,562	654,562	134,525	134,525	176	176
2009	200,000	324,515	324,515	324,515	324,515	119,127	119,127	173	173
2010	250,000	389,384	389,384	389,384	389,384	87,270	87,270	137	137
2011	*	2,092,816	2,092,816	879,940	879,940	127,474	127,474	184	184
2012	250,000	559,108	559,108	559,108	559,108	92,085	92,085	180	180
2013	250,000	582,706	582,706	582,706	582,706	112,692	112,692	170	170
2014	250,000	1,176,859	1,176,859	1,162,693	1,162,693	103,333	103,333	169	169
2015	250,000	651,268	651,268	651,268	651,268	94,439	94,439	171	171
2016	250,000	448,203	448,203	448,203	448,203	124,197	124,197	172	172
2017	250,000	607,680	607,680	607,680	607,680	101,811	101,811	168	168
2018	250,000	591,312	571,312	591,312	571,312	134,358	131,858	194	193
2019	250,000	1,285,139	1,284,901	839,639	839,639	130,981	130,981	119	118
2020	250,000	1,155,975	1,155,975	1,074,816	1,074,816	143,735	143,735	143	143
2021	250,000	1,048,989	976,614	1,048,489	976,614	211,450	203,977	159	144
2022	250,000	888,335	565,640	888,335	565,640	233,815	150,197	135	78
Total		\$16,888,061	\$16,472,752	\$14,864,146	\$14,449,576	\$2,157,021	\$2,063,430	4,436	4,362

Notes: Retentions apply to indemnity and ALAE; the deductible is \$2,500 per occurrence  
(2)-(10) Provided by MVRMA  
(\*) 2008 retained losses reflect capping a wind storm totaling \$320,356  
2011 retained losses reflect capping a hail storm totaling \$628,004