Staff Responses to Council Questions
11/01/2022

First Reading - A. Information: FY 2023 Budget Introduction

1. What is the actuarial change that drove the fire pension contribution decrease?

   There were 2 main reasons for the decrease in the property tax levy for the Fire Pension Fund: 1) Asset returns greater than expected in 2021, upon which the FY2023 property tax levy is based, and 2) A change in the actuarial assumption regarding cost of living increases for surviving spouses, which resulted in reduced pension obligations for these individuals beginning in FY2023.

2. Is the fire pension under any remaining local control or is it all under the new state board?

   As a result of the Pension Consolidation Act adopted by the State of Illinois beginning in 2020, police and fire pension fund investments are managed by State Boards. These boards:
   - *Pool funds from each individual pension fund and place the investments.*
   - *Make decisions about the actuarial model which determines the required contributions.*

   For more information regarding the Act, the Illinois Municipal League prepared a [Fact Sheet]

   The Fire Pension retains certain elements of local control, which include the following:
   - *Retain a local pension board to manage benefit distribution and eligibility determinations, including pension disability awards.*
   - *Retain ownership of the assets and liabilities of the pension fund.*
   - *Retain control over award of disability pensions.*

3. Could you please provide the latest actuarial reports and updates, and investment reports for the fund?
   The following documents have been included as attachments:
   - *Downers Grove Firefighters' Pension Fund Actuarial Report*
   - *Downers Grove Firefighters' Pension Fund Portfolio Activity Report*
   - *Downers Grove Police Pension Fund Actuarial Report*
   - *Downers Grove Police Pension Fund Portfolio Activity Report*

4. What is the effect of actually contributing more now? Of waiting? Would the pension levy next year be lower than if we did not choose this route or is the pension levy fixed by statute?

The flat levy alternative approach described in the FY23 Budget Message is intended to smooth the expected property tax impact of a reduced public safety required contribution in 2023 followed by a significant increase in the required contribution in 2024. This is a two-year smoothing plan.

The pension levy can be adjusted when other funding sources are used, so long as the actuarially required contribution is made. If the Village Council would like to smooth the effect of fluctuations in the property tax levy for public safety pensions, the Alternative Flat Levy approach outlined on page 10 of the budget message would achieve this objective.

Contributing more than the actuarially required contribution directly into the pension funds in FY2023 would result in the increased amount being amortized over the next 18 years. This would reduce the FY2024 contribution by only 7.6% of the amount of the increased contribution.

5. Are Village Gateway entrance signs included in the budget?

   The Village Gateway entrance signs are planned to be included in the FY24 budget. As discussed during the Council review and approval of the design development plans for the Civic Center project, the Village gateway entrance signs will be designed to match or be very similar to the monument signs for the Civic Center. The final design of the Civic Center monument signs are being completed now. The monument signs will be installed in 2024. The gateway signs will be installed in 2024 and the following years.

6. Please explain the Linda Kunze Plaza project.

   This project consists of maintenance and upgrades to the plaza. The plaza, located outside of the Main Street train station, was constructed in the late 1990's as part of the downtown infrastructure improvement project. Many components of the plaza are in need of repair or replacement. This project will result in a reconstruction of the plaza. The design of the plaza could be used to influence the design of future downtown streetscape improvements.

7. Which of the planned stormwater projects require land acquisition? Is staff confident that these projects can be constructed in 2023?

   The following stormwater projects have land acquisition planned for 2023, SW-099 & SW-100. Both projects will be designed in 2023 and constructed in 2024, if the required land is acquired. Staff plans on proceeding with design and land acquisition concurrently in 2023. If the Village is unable to acquire the land necessary to complete the project, adjustments to the project design or schedule may have to be made.

8. What is the status of the FY22 project - Drainage improvements at Fairview station parking lot?
   The drainage improvements at the Fairview station parking lot were designed in 2022. A BNSF permit is required to commence the construction. Staff submitted a permit application to BNSF. At this time Public Works is awaiting a permit to start the work. The work is scheduled to be completed in 2023 after acquiring the permit.

9. What is the status of the replacement of the downtown sidewalk corner replacements? Will the corners that have recently been improved with asphalt be replaced with permanent improvements in 2023?

   Some of the sidewalks near intersections have been improved with temporary asphalt to address safety concerns. All of the downtown sidewalk corners along Main Street from Maple to Franklin will be replaced in 2023. The crosswalks at the intersections will also be replaced with the new material that was used in 2022.

ATTACHMENTS FOR STAFF RESPONSES TO COUNCIL QUESTIONS 11/01/2022

Downers Grove Firefighters' Pension Fund Actuarial Report

Downers Grove Firefighters Pension Fund Portfolio Activity

Report Downers Grove Police Pension Fund Actuarial

Downers Grove Police Pension Fund

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Actuarial Funding Report

DOWNERS GROVE FIREFIGHTERS' PENSION FUND

Actuarial Valuation
as of January 1, 2022

For the Contribution Year January 1, 2021 to December 31, 2022

LAUTERBACH & AMEN, LLP

Actuarial Valuation – Funding Recommendation

Lauterbach & Amen, LLP

CERTIFIED PUBLIC ACCOUNTANTS

DOWNERS GROVE FIREFIGHTERS' PENSION FUND

Contribution Year Ending: December 31, 2022
Actuarial Valuation Date: January 1, 2022
Utilizing Data as of December 31, 2021

Submitted by:

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Contact:

Todd A. Schroeder
Director
August 11, 2022

LAUTERBACH & AMEN, LLP

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ACTUARIAL CERTIFICATION

This report documents the results of the Actuarial Valuation for the Downers Grove Firefighters' Pension Fund. The information was prepared for use by the Downers Grove Firefighters' Pension Fund and the Village of Downers Grove, Illinois for determining the Recommended Contribution under the selected Funding Policy the Contribution Year January 1, 2021 to December 31, 2022. It is not intended or suitable for other purposes. Determinations for purposes other than the Employer's Actuarial Recommended Contribution may be significantly different from the results herein.

The results in this report are based on the census data and financial information submitted by the Downers Grove Firefighters' Pension Fund, and may include results from the prior Actuary. We did not prepare the Actuarial Valuations for the years prior to January 1, 2016. Those valuations were prepared by the prior Actuary whose reports have been furnished to us, and our disclosures are based on those reports. An audit of the prior Actuary's results was not performed, but high-level reviews were completed for general reasonableness, as appropriate, based on the purpose of this valuation. The accuracy of the results is dependent on the precision and completeness of the underlying information.

In addition, the results of the Actuarial Valuation involve certain risks and uncertainty as they are based on future assumptions, market conditions, and events that may never materialize as assumed. For this reason, certain assumptions and future results may be materially different than those presented in this report. See the *Management Summary* section of this report for a more detailed discussion of the Defined Benefit Plan Risks, as well as the limitations of this Actuarial Valuation on assessing those risks. We are not aware of any known events subsequent to the Actuarial Valuation Date, which are not reflected in this report but should be valued, that may materially impact the results.

The valuation results summarized in this report involve actuarial calculations that require assumptions about future events. The Downers Grove Firefighters' Pension Fund selected certain assumptions, while others were the result of guidance and/or judgment from the Plan's Actuary or Advisors. We believe that the assumptions used in this valuation are reasonable and appropriate for the purposes for which they have been used. The selected assumptions represent our best estimate of the anticipated long-term experience of the Plan, and meet the guidelines set forth in the Actuarial Standards of Practice.

In preparing the results, our Actuaries used commercially available software (ProVal) developed by Winklevoss Technologies, LLC. This software is widely used for the purpose of performing Actuarial Valuations. Our Actuaries coded the plan provisions, assumptions, methods, and participant data summarized in this report, and reviewed the liability and cost outputs for reasonableness. We are not aware of any material weaknesses or limitations in the software, and have determined it is appropriate for performing this valuation.

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To the best of our knowledge, all calculations are in accordance with the applicable funding requirements, and the procedures followed and presentation of results conform to generally accepted actuarial principles and practices as prescribed by the Actuarial Standards Board. The undersigned consultants of Lauterbach & Amen, LLP, with actuarial credentials, meet the Qualification Standards of the American Academy of Actuaries to render this Actuarial Certification. There is no relationship between the Downers Grove Firefighters' Pension Fund and Lauterbach & Amen, LLP that impairs our objectivity.

Respectfully Submitted,

LAUTERBACH & AMEN, LLP

Todd A. Schroeder

Todd A. Schroeder, ASA, FCA, EA, MAAA

Robert L. Rietz, Jr., FCA, EA, MAAA

MANAGEMENT SUMMARY

Recommended Contribution
Funded Status
Management Summary – Comments and Analysis
Actuarial Recommended Contribution – Reconciliation

MANAGEMENT SUMMARY

RECOMMENDED CONTRIBUTION

	Prior Valuation	Current Valuation
Recommended Contribution	$4,903,198	$4,467,226
Expected Payroll	$7,562,223	$7,844,965
Recommended Contribution as a Percent of Expected Payroll	64.84%	56.94%

The Recommended Contribution has Decreased by $435,972 from the Prior Valuation.

FUNDED STATUS

	Prior Valuation	Current Valuation
Normal Cost	$1,701,468	$1,721,583
Fair Value of Assets	$68,459,405	$77,411,034
Actuarial Value of Assets	$64,461,126	$71,254,316
Actuarial Accrued Liability	$116,722,524	$116,060,481
Unfunded Actuarial Accrued Liability/(Surplus)	$52,261,398	$44,806,165
Percent Funded		
Actuarial Value of Assets	55.23%	61.39%
Fair Value of Assets	58.65%	66.70%

The Percent Funded has Increased by 6.16% on an Actuarial Value of Assets Basis.

MANAGEMENT SUMMARY – COMMENTS AND ANALYSIS

Contribution Results

The Recommended Contribution is based on the selected Funding Policy and methods that are outlined in the *Actuarial Funding Policies* section of this report.

"Contribution Risk" is defined by the Actuarial Standards of Practice as the potential for actual future contributions to deviate from expected future contributions. For example, when actual contributions are not made in accordance to the Plan's Funding Policy, or when future experience deviates materially from assumed. While it is essential for the Actuary and Plan Sponsor to collaborate on implementing a sound and financially feasible Funding Policy, it is important to note that the Actuary is not required, and is not in the position to, evaluate the ability or willingness of the Plan Sponsor to make the Recommended Contribution under the selected Funding Policy.

As a result, while Contribution Risk may be a significant source of risk for the Plan, this Actuarial Valuation makes no attempt to assess the impact of future contributions falling short of those recommended under the selected Funding Policy. Notwithstanding the above, see the *Actuarial Recommended Contribution – Reconciliation* section of this report for the impact on the current Recommended Contribution of any contribution shortfalls or excesses from the prior year.

Defined Benefit Plan Risks

Asset Growth:

Pension funding involves preparing Fund assets to pay for benefits when Members retire. During their working careers, assets grow with contributions and investment earnings; and then, the Pension Fund distributes assets in retirement. Based on the Plan's current mix of Members and Funded Status, the Plan should experience positive asset growth, on average, if the Recommended Contributions are made and expected investment earnings come in. In the current year, the Fund asset growth was positive by approximately $8,952,000.

Asset growth is important in the long-term. Long-term cash flow out of the Pension Fund is primarily benefit payments, and expenses are a smaller portion. The Plan should monitor the impact of expected benefit payments on future asset growth. We assess and project all future benefit payments as part of the determination of liability. The assessment is made on all current Members of the Fund, both active and inactive. For active Members, the assessment includes the probability that Members terminate or retire and begin receiving benefits. In the next 5 years, benefit payments are anticipated to increase 30-35%, or approximately $1,727,000. In the next 10 years, the expected increase in benefit payments is 60-65%, or approximately $3,332,000. The estimated increase in benefit payments is being compared against the benefits paid to inactive Members during the fiscal year, excluding any refunds of Member Contributions.

Furthermore, plans with a large number of inactive Members have an increased "Longevity Risk". Longevity Risk is the possibility that inactive Members may live longer than projected by the Plan's mortality assumption. As shown in the previous paragraph, benefit payments are expected to increase

MANAGEMENT SUMMARY

over the next 5-year and 10-year horizons. The projected increases assume that current inactive Members pass away according to the Plan's mortality assumption. To the extent that current inactive Members live longer than expected, the future 5-year and 10-year benefit projections may be larger than the amounts disclosed in the previous paragraph. Higher levels of benefit payments, payable for a longer period of time, may cause a significant strain to the Plan's cash flow, future Recommended Contributions, and may lead to Plan insolvency.

Unfunded Liability:
Unfunded Liability represents the financial shortfall of the Actuarial Value of Assets compared to the Actuarial Accrued Liability. To the extent that Unfunded Liability exists, the Plan is losing potential investment earnings due to the financial shortfall. Contributions towards Unfunded Liability pay for the lost investment earnings, as well as the outstanding unfunded amount. If payments towards Unfunded Liability are not made, the Unfunded Liability will grow.

In the early 1990s, many Pension Funds in Illinois adopted an increasing payment towards Unfunded Liability due to a change in legislation. The initial payment decreased, and future payments are anticipated to increase annually after that. In many situations, payments early on were less than the interest on Unfunded Liability, which means that Unfunded Liability increased even though contributions were made at the recommended level.

The current Recommended Contribution includes a payment towards Unfunded Liability that is approximately $277,000 greater than the interest on Unfunded Liability. All else being equal, and contributions being made, Unfunded Liability is expected to decrease. The Employer and Fund should anticipate that improvement in the current Percent Funded will be mitigated in the short-term. The Employer and Fund should understand this impact as we progress forward to manage expectations.

Actuarial Value of Assets:
The Pension Fund smooths asset returns that vary from expectations over a 5-year period. The intention is that asset returns for purposes of funding recommendations are a combination of several years. The impact is intended to smooth out the volatility of Recommended Contributions over time, but not necessarily increase or decrease the level of contributions over the long-term.

When asset returns are smoothed, there are always gains or losses on the Fair Value of Assets that are going to be deferred for current funding purposes, and recognized in future years. Currently, the Pension Fund is deferring approximately $6,157,000 in gains on the Fair Value of Assets. These are asset gains that will be recognized in upcoming periods, independent of the future performance of the Fair Value of Assets.

Cash Flow Risk:
Assets, liabilities, and Funded Status are good metrics to monitor over time to assess the progress of the Funding Policy. However, these metrics may provide limited forward-looking insights. Specifically, the maturity of a Pension Fund can pose certain risks that often cannot be assessed with a point-in-time metric such as Percent Funded.

MANAGEMENT SUMMARY

For example, two different Pension Funds could have the same Percent Funded, but have completely different risk profiles. One Fund might mostly cover active Members with little to no Members in pay status, whereas a second Fund might mostly cover inactive Members with a significant level of annual benefit payments. The latter Fund has a greater "Cash Flow Risk", i.e. a more significant chance that negative cash flows could lead to a deteriorating, rather than improving, Percent Funded over time.

It is important to note that, in general, positive net cash flows are good, but also need to be sufficient to cover the growth in the liabilities (i.e. the Normal Cost as well as interest on the Actuarial Accrued Liability). Typically, when cash flows are assumed to be insufficient to cover the growth in liabilities, the Percent Funded will decline, while future Recommended Contributions will increase.

For this Plan, the Fair Value of Assets is less than the Actuarial Accrued Liability for inactive Members. The Fund assets and anticipated investment earnings are not sufficient to cover the benefits payable to the current inactive Members. In addition, there is currently no money set aside for active Member liability. There are two consequences. First, we are limiting the impact of investment earnings on accruing money for the active Members due to utilizing those dollars to pay for the current inactive Members. Second, there is Cash Flow Risk that exists in that a higher portion of the assets is needed to keep up with cash flow out for benefit payments, and a higher relative investment return is required to keep cash flow positive in any given year.

Benefit Payment Risk:
Ideally, plans in a sound financial position will have the ratio of annual benefits payments to the Fair Value of Assets to be less than the Expected Rate of Return on Investments assumption (i.e. 7.00%). Theoretically, in this case it can be considered that investment returns will fully cover the annual benefit payments, and therefore, all Employer and Member Contributions made to the Fund will be used to pay for future benefit accruals and pay down the existing Unfunded Liability. To the extent that the ratio of the annual benefit payments to the Fair Value of Assets increases to above the Expected Rate of Return on Investments assumption, the Plan may experience some additional risks, such as the need to keep assets in more liquid investments, inability to pay down Unfunded Liability, and may lead to Plan insolvency.

As of the Valuation Date, the Downers Grove Firefighters' Pension Fund has a ratio of benefit payments to the Fair Value of Assets of 7.10%. In this case, a portion of the Employer Contributions are being used to pay the annual benefit payments creating Benefit Payment Risk and Cash Flow Risk. The Percent Funded of the Plan may not grow as quickly as expected under the current Funding Policy, since the amortization payment towards the Unfunded Liability is not being fully realized. As shown in the *Asset Growth* section of this report, the 5-year and 10-year horizons of future benefit payments are expected to increase. The Plan Sponsor should monitor the percentage of annual benefit payments to the Fair Value of Assets and consider changing the Funding Policy if this ratio continues to increase.

MANAGEMENT SUMMARY

Fund Assets

The results in this report are based on the assets held in the Pension Fund. Assets consist of funds held for investment and for benefit payments as of the Actuarial Valuation Date. In addition, assets may be adjusted for other events representing dollars that are reasonably expected to be paid out from the Pension Fund or deposited into the Pension Fund after the Actuarial Valuation Date as well.

The current Fund assets are audited.

The Fund Assets Used in this Report are Audited.

The Actuarial Value of Assets under the Funding Policy is equal to the Fair Value of Assets, with unexpected gains and losses smoothed over 5 years. More detail on the Actuarial Value of Assets can be found in the *Actuarial Funding Policies* section of this report.

MANAGEMENT SUMMARY

Demographic Data

Demographic factors can change from year to year within the Pension Fund. Changes in this category include hiring new Members, Members retiring or becoming disabled, inactive Members passing away, and other changes. Demographic changes can cause an actuarial gain (contribution that is less than expected compared to the prior year) or an actuarial loss (contribution that is greater than expected compared to the prior year).

Demographic gains and losses occur when the assumptions over the one-year period for Member changes do not meet our long-term expectation. For example, if no Members become disabled during the year, we would expect a liability gain. If more Members become disabled than anticipated during the year, we would expect a liability loss. Generally, we expect short-term fluctuations in demographic experience to create gains or losses of 1%-3% of the Actuarial Accrued Liability in any given year, but to balance out in the long-term.

"Demographic Risk" occurs when Plan demographic experience differs significantly from expected. Similar to Longevity Risk discussed previously, additional risk is created when demographic experience differs from the assumed rates of disability, retirement, or termination. Under the chosen assumptions, actuarial gains and/or losses will always occur, as the assumptions will never be exactly realized. However, the magnitude of the gain and/or loss and its influence on the Recommended Contribution largely depends on the size of the Plan.

Based on the number of active Members in the Plan, the Recommended Contribution has a low risk of having a significant increase due to demographic experience. For example, 1 new disabled Member would typically generate a substantial increase to the Actuarial Accrued Liability. However, due to the size of the Plan, there is an appropriate means to absorb demographic losses without causing a significant increase to the Recommended Contribution.

In the current report, the key demographic changes were as follows:

New Hires: There were 4 Members of the Fund who were hired during the year. When a Member is admitted to the Pension Fund, the Employer Contribution will increase to reflect the new Member. The increase in the Recommended Contribution in the current year due to the new Member experience is approximately $24,200.

Retirement: There were 4 Members of the Fund who retired during the year. When a Member retires, the Normal Cost will decrease. Any change in the Actuarial Accrued Liability will be considered when determining the amount to pay towards Unfunded Liability each year. The increase in the Recommended Contribution in the current year due to the retirement experience is approximately $35,700.

Mortality: There was 1 retiree and 1 disabled Member who passed away during the year, both of whom had an eligible surviving spouse. Also, there was 1 surviving spouse who passed away during the year. In addition, there was 1 deferred Member who passed away shortly after Fiscal Year End, with an eligible surviving spouse. When a retiree passes away, the Fund liability will decrease as the Pension Fund no

MANAGEMENT SUMMARY

longer will make future payments to the retiree. If there is an eligible surviving spouse, the Fund liability will increase to represent the value of the expected payments that will be made to the spouse. When a surviving spouse passes away, the Fund liability will decrease as the Pension Fund no longer will make future payments to the surviving spouse.

As inactive Members age and continue to collect benefits, the Fund liability will also increase. In the current year, there were 84 inactive Members who maintained their benefit collection status throughout the year. The net decrease in the Recommended Contribution in the current year due to the mortality experience is approximately $37,000.

Salary Increases: Salary increases were greater than anticipated in the current year. This caused an increase in the Recommended Contribution in the current year of approximately $9,000.

<u>Assumption Changes</u>
The assumptions were not changed from the prior valuation.

<u>Funding Policy Changes</u>
The Funding Policy was not changed from the prior valuation.

<u>Other Considerations</u>
The best due diligence continues to be the process of annually reviewing assumptions, provisions, and methodologies. Our commitment to reviewing new information regularly continues to be at the forefront of our reporting. In the current valuation, we have updated the underlying valuation software to value the most accurate estimate of Surviving Spouse benefits, including the expected Cost-of-Living Adjustments, described under the Illinois State Statutes. As a result, this caused a decrease in the Actuarial Accrued Liability of approximately $5,364,000, with a corresponding decrease in the Recommended Contribution of approximately $435,000.

MANAGEMENT SUMMARY

ACTUARIAL RECOMMENDED CONTRIBUTION – RECONCILIATION

Actuarial Accrued Liability is expected to increase each year for both interest for the year and as active Members earn additional service years towards retirement. Similarly, Actuarial Accrued Liability is expected to decrease when the Fund pays benefits to inactive Members.

Contributions are expected to increase as expected pay increases under the Funding Policy for the Fund.

	Actuarial Liability	Recommended Contribution
Prior Valuation	$ 116,722,524	$ 4,903,198
Expected Changes	4,284,531	159,354
Initial Expected Current Valuation	$ 121,007,055	$ 5,062,552

Other increases or decreases in Actuarial Accrued Liability (key changes noted below) will increase or decrease the amount of Unfunded Liability in the Plan. To the extent that Unfunded Liability increases or decreases unexpectedly, the contribution towards Unfunded Liability will also change unexpectedly.

	Actuarial Liability	Recommended Contribution
Salary Increases Greater than Expected	$ (52,407)	$ 9,032
Actuarial Experience	(5,145,186)	(447,224)
Demographic Changes After Fiscal Year End	251,019	19,121
Asset Return Greater than Expected*	-	(181,405)
Contributions Less than Expected	-	5,150
Total Increase/(Decrease)	$ (4,946,574)	$ (595,326)
Current Valuation	$ 116,060,481	$ 4,467,226

*Impact on the Recommended Contribution due to asset return is on an Actuarial Value of Assets basis.

The Actuarial Experience can be attributable to several factors including Actuarial Valuation software changes, demographic changes, and benefit payment experience compared to expectation. Key demographic changes were discussed in the *Demographic Data* section of this report.

VALUATION OF FUND ASSETS

Fair Value of Assets
Fair Value of Assets (Gain)/Loss
Development of the Actuarial Value of Assets
Actuarial Value of Assets (Gain)/Loss
Historical Asset Performance

VALUATION OF FUND ASSETS

FAIR VALUE OF ASSETS

Statement of Assets

	Prior Valuation	Current Valuation
Cash and Cash Equivalents	$ 156,224	$ 2,767,696
Money Market	1,170,797	1,188,461
Fixed Income	21,483,578	22,894,207
Insurance Contracts	5,558,836	-
Insurance Co Contracts - Separate	-	6,804,634
Mutual Funds	39,983,981	43,671,965
Receivables (Net of Payables)	105,989	84,071
Total Fair Value of Assets	$ 68,459,405	$ 77,411,034

The Total Fair Value of Assets has Increased by Approximately $8,952,000 from the Prior Valuation.

Statement of Changes in Assets

Total Fair Value of Assets - Prior Valuation	$ 68,459,405
Plus - Employer Contributions	4,824,149
Plus - Member Contributions	721,272
Plus - Return on Investments	8,954,956
Less - Benefit Payments and Refunds	(5,502,635)
Less - Other Expenses	(46,113)
Total Fair Value of Assets - Current Valuation	$ 77,411,034

The Rate of Return on Investments on a Fair Value of Assets Basis for the Fund was Approximately 13.01% Net of Administrative Expense.

The Rate of Return on Investments shown above has been determined as a percent of the average of the prior and current Fair Value of Assets on the Statement of Changes in Assets. The Return on Investments is net of Other Expenses, and has been excluded from the Total Fair Value of Assets at the end of the Fiscal Year for this calculation.

VALUATION OF FUND ASSETS

FAIR VALUE OF ASSETS (GAIN)/LOSS

Current Year (Gain)/Loss on Fair Value of Assets

Total Fair Value of Assets - Prior Valuation	$ 68,459,405
Employer and Member Contributions	5,545,421
Benefit Payments and Refunds	(5,502,635)
Expected Return on Investments	4,793,656
Expected Total Fair Value of Assets - Current Valuation	$ 73,295,847
Actual Total Fair Value of Assets - Current Valuation	77,411,034
Current Fair Value of Assets (Gain)/Loss	$ (4,115,187)
Expected Return on Investments	$ 4,793,656
Actual Return on Investments (Net of Expenses)	8,908,843
Current Fair Value of Assets (Gain)/Loss	$ (4,115,187)

The Actual Return on Investments on a Fair Value of Assets Basis was Greater than Expected for the Current Year.

The (Gain)/Loss on the current Fair Value of Assets has been determined based on the Expected Rate of Return on Investments as shown in the *Actuarial Assumptions* section of this report.

VALUATION OF FUND ASSETS

DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS

Total Fair Value of Assets - Current Valuation			$ 77,411,034
Adjustment for Prior (Gains)/Losses			
		Full Amount	Deferral
	FYE 2021	$ (4,115,187)	(3,292,150)
	FYE 2020	(2,998,339)	(1,799,003)
	FYE 2019	(5,645,688)	(2,258,275)
	FYE 2018	5,963,549	1,192,710
	Total Deferred (Gain)/Loss		(6,156,718)
Initial Actuarial Value of Assets - Current Valuation			$ 71,254,316
Less Contributions for the Current Year and Interest			-
Adjustment for the Corridor			-
Total Actuarial Value of Assets - Current Valuation			$ 71,254,316

The Actuarial Value of Assets is Equal to the Fair Value of Assets with Unanticipated (Gains)/Losses Recognized Over 5 Years. The Actuarial Value of Assets is 92.05% of the Fair Value of Assets.

ACTUARIAL VALUE OF ASSETS (GAIN)/LOSS

Total Actuarial Value of Assets - Prior Valuation	$ 64,461,126
Plus - Employer Contributions	4,824,149
Plus - Member Contributions	721,272
Plus - Return on Investments	6,796,517
Less - Benefit Payments and Refund	(5,502,635)
Less - Other Expenses	(46,113)
Total Actuarial Value of Assets - Current Valuation	$ 71,254,316

The Rate of Return on Investments on an Actuarial Value of Assets Basis for the Fund was Approximately 10.47% Net of Administrative Expense.

The Actuarial Value of Assets incorporates portions of gains and losses over multiple years.

VALUATION OF FUND ASSETS

HISTORICAL ASSET PERFORMANCE

The chart below shows the historical Rates of Return on Investments for both Fair Value of Assets and Actuarial Value of Assets.

	Fair Value of Assets	Actuarial Value of Assets
FYE 2021	13.01%	10.47%
FYE 2020	11.89%	9.09%
FYE 2019	17.78%	6.31%
FYE 2018	(3.86%)	4.40%
FYE 2017	13.14%	7.23%
FYE 2016	6.53%	6.24%
FYE 2015	0.70%	6.90%

The historical Rates of Return on Investments shown above were calculated based on the annual Return on Investments, as a percentage of the average value of the assets for the year.

For purposes of determining the average value of assets for the year, the ending Fair Value of Assets has been adjusted to net out to the portion related to the Return on Investments themselves. All other cash flows are included.

For purposes of determining the annual Return on Investments we have adjusted the figures shown on the preceding pages. The figures shown on the preceding pages are net of Investment Expenses. We have made an additional adjustment to net out Administrative Expenses. Netting out Administrative Expenses allows us to capture returns for the year that can be used to make benefit payments as part of the ongoing actuarial process.

The adjustments we made are for actuarial reporting purposes only. By netting out Administrative Expenses and capturing Return on Investments that are available to pay benefits, it provides us a comparison to the Expected Rate of Return on Investments, but does not provide a figure that would be consistent with the rates of return that are determined by other parties. Therefore, this calculated Return on Investments should not be used to analyze investment performance of the Fund or the performance of the investment professionals.

VALUATION OF FUND ASSETS

Expected Rate of Return on Investments Assumption

The Expected Rate of Return on Investments for this valuation is 7.00%. Lauterbach & Amen, LLP does not provide investment advice. We look at a variety of factors when reviewing the Expected Rate of Return on Investments assumption selected by the Board. These factors include: historical Rates of Return on Investments, capital market projections performed by the Fund's investment advisors, the Fund's investment policy, capital market forward-looking benchmark expected returns by independent investment companies, rates used by comparable pension systems, and other factors identified in the Actuarial Standards of Practice.

Generally speaking, the ideal assumption for Expected Rate of Return on Investments is one that has a 50% chance of being met over the long-term. If actual returns going forward come in less than expected, the pension system risks deferring contributions to the future that should be made today and creating additional contribution volatility. Reducing the Expected Rate of Return on Investments by 25 basis points produces a Recommended Contribution that is 7.29% higher than currently shown.

"Investment Risk" is the potential that actual Return on Investments will be different from what is expected. The selected Expected Rate of Return on Investments assumption is chosen to be a long-term assumption, producing a return that, on average, would produce a stable rate of return over a long-term horizon. Actual asset returns in the short-term may deviate from this long-term assumption due to current market conditions. Furthermore, establishing the Expected Rate of Return on Investments assumption may be dependent on the Illinois State Statutes pertaining to the limitations on types of investments Plan Sponsors may use. If the actual annual rates of return are less than the Expected Rate of Return on Investments, actuarial losses will be produced, thus increasing the Plan's Unfunded Liability and, subsequently, future Recommended Contributions.

"Asset/Liability Mismatch" risk is a similar concept as Investment Risk, as it relates to setting the Expected Rate of Return on Investments assumption compared to the actual Return on Investments achieved. The Interest Rate used to discount future Plan liabilities is set equal to the Expected Rate of Return on Investments. It is expected that the selected Interest Rate be a rate that is reasonably expected to be achieved over the long-term. To the extent that the selected Interest Rate to value Plan liabilities is unreasonable, or significantly different than the actual Return on Investments earned over an extended period of time, additional Interest Rate risk is created. For example, determining Plan liabilities at an Interest Rate higher than what is expected to be achieved through investment returns results in Unfunded Liability that is not a true representation of the Plan's condition and Percent Funded. As a result, the Actuarial Accrued Liability determined is an amount smaller than the liability that would be produced with an Interest Rate more indicative of future Expected Rate of Return on Investments. Therefore, the Recommended Contributions under the established Funding Policy may not be sufficient to appropriately meet the true pension obligations.

RECOMMENDED CONTRIBUTION DETAIL

Actuarial Accrued Liability
Funded Status
Development of the Employer Normal Cost
Normal Cost as a Percentage of Expected Payroll
Recommended Contribution Breakdown
Schedule of Amortization – Unfunded Actuarial Accrued Liability
Actuarial Methods – Recommended Contribution

RECOMMENDED CONTRIBUTION DETAIL

ACTUARIAL ACCRUED LIABILITY

	Prior Valuation	Current Valuation
Active Members	$ 28,690,790	$ 27,783,712
Inactive Members		
Terminated Members	2,998,563	904,662
Retired Members	64,804,117	66,847,709
Disabled Members	17,796,847	16,654,012
Other Beneficiaries	2,432,207	3,870,386
Total Inactive Members	88,031,734	88,276,769
Total Actuarial Accrued Liability	$ 116,722,524	$ 116,060,481

The Total Actuarial Accrued Liability has Decreased by Approximately $662,000 from the Prior Valuation.

FUNDED STATUS

	Prior Valuation	Current Valuation
Total Actuarial Accrued Liability	$ 116,722,524	$ 116,060,481
Total Actuarial Value of Assets	64,461,126	71,254,316
Unfunded Actuarial Accrued Liability	$ 52,261,398	$ 44,806,165
Total Fair Value of Assets	$ 68,459,405	$ 77,411,034
Percent Funded		
Actuarial Value of Assets	55.23%	61.39%
Fair Value of Assets	58.65%	66.70%

The Percent Funded as of the Actuarial Valuation Date is Subject to Volatility on Assets and Liability in the Short-Term.

RECOMMENDED CONTRIBUTION DETAIL

Development of the Employer Normal Cost

	Prior Valuation	Current Valuation
Total Normal Cost	$ 1,701,468	$ 1,721,583
Estimated Member Contributions	(709,836)	(736,440)
Employer Normal Cost	$ 991,632	$ 985,143

At a 100% Funding Level, the Normal Cost Contribution is Still Required.

Normal Cost as a Percentage of Expected Payroll

	Prior Valuation	Current Valuation
Expected Payroll	$ 7,562,223	$ 7,844,965
Member Normal Cost Rate	9.455%	9.455%
Employer Normal Cost Rate	13.04%	12.49%
Total Normal Cost Rate	22.50%	21.95%

Ideally, the Employer Normal Cost Rate will Remain Stable.

Recommended Contribution Breakdown

	Prior Valuation	Current Valuation
Employer Normal Cost*	$ 1,061,046	$ 1,054,103
Amortization of Unfunded Accrued Liability/(Surplus)	3,842,152	3,413,123
Recommended Contribution	$ 4,903,198	$ 4,467,226

The Recommended Contribution has Decreased by 8.89% from the Prior Valuation.

*Employer Normal Cost Contribution includes interest through the end of the Fiscal Year.

RECOMMENDED CONTRIBUTION DETAIL

Schedule of Amortization – Unfunded Actuarial Accrued Liability

Below is the schedule of remaining amortization balances for the Unfunded Liability.

Unfunded Liability Base	Initial Balance	Date Established	Current Balance	Years Remaining	Payment
Investment (Gain)/Loss	$ (2,381,413)	12/31/2021	$ (2,381,413)	19	$ (181,405)
Actuarial (Gain)/Loss	(4,851,251)	12/31/2021	(4,851,251)	19	(369,545)
Contribution Experience	(38,715)	12/31/2021	(38,715)	19	(2,949)
Investment (Gain)/Loss	(1,351,484)	12/31/2020	(1,346,730)	19	(102,588)
Actuarial (Gain)/Loss	2,481,122	12/31/2020	2,472,394	19	188,336
Contribution Experience	(31,316)	12/31/2020	(31,206)	19	(2,377)
Investment (Gain)/Loss	286,396	12/31/2019	285,067	19	21,715
Actuarial (Gain)/Loss	1,207,673	12/31/2019	1,202,072	19	91,568
Contribution Experience	(32,097)	12/31/2019	(31,948)	19	(2,434)
Assumption Changes	2,243,354	12/31/2019	2,232,950	19	170,096
Plan Changes	839,304	12/31/2019	835,410	19	63,638
Investment (Gain)/Loss	1,313,366	12/31/2018	1,310,607	19	99,836
Actuarial (Gain)/Loss	2,684,798	12/31/2018	2,679,156	19	204,086
Contribution Experience	(32,257)	12/31/2018	(32,189)	19	(2,452)
Initial Unfunded Liability	$ 42,399,208	12/31/2017	$ 42,501,961	19	$ 3,237,598
Total	**$ 44,736,688**		**$ 44,806,165**		**$ 3,413,123**

The Actuarial (Gain)/Loss can be attributable to several factors including Actuarial Valuation software changes, demographic changes, Employer Contribution timing, Member Contribution experience, benefit payment experience, and salary increase experience compared to expectation.

RECOMMENDED CONTRIBUTION DETAIL

ACTUARIAL METHODS – RECOMMENDED CONTRIBUTION

Actuarial Valuation Date	January 1, 2022
Data Collection Date	December 31, 2021
Actuarial Cost Method	Entry Age Normal (Level % Pay)
Amortization Method	Level % Pay (Closed)
Amortization Target	100% Funded Over 19 Years
Asset Valuation Method	5-Year Smoothed Fair Value

The contributions and benefit values of the Pension Fund are calculated by applying actuarial assumptions to the benefit provisions and census data furnished, using the Actuarial Cost Method described. The Actuarial Cost and Amortization Methods allocate the projected obligations of the Plan over the working lifetimes of the Plan Members.

The Recommended Contribution amount shown in this report is based on the methods summarized above. The *Actuarial Funding Policies* section of this report includes a more detailed description of the Actuarial Funding Methods being used.

The Actuarial Funding Methods are meant to provide a systematic process for determining contributions on an annual basis. The methods do not impact the expectation of future benefit payments. The methods only impact the way contributions are made towards future benefit payments.

Different Actuarial Funding Methods may achieve funding goals with differing levels of success. Certain methods are more efficient and more stable on an annual basis.

ACTUARIAL VALUATION DATA

Active Members
Inactive Members
Summary of Monthly Benefit Payments
Age and Service Distribution

ACTUARIAL VALUATION DATA

ACTIVE MEMBERS

	Prior Valuation	Current Valuation
Tier I	37	34
Tier II	36	40
Total Active Members	73	74
Total Payroll	$ 7,441,302	$ 7,719,523

INACTIVE MEMBERS

	Prior Valuation	Current Valuation
Terminated Members	9	7
Retired Members	55	58
Disabled Members	19	18
Other Beneficiaries	15	15
Total Inactive Members	98	98

SUMMARY OF MONTHLY BENEFIT PAYMENTS

	Prior Valuation	Current Valuation
Retired Members	$ 320,822	$ 349,951
Disabled Members	90,593	87,186
Other Beneficiaries	23,188	34,211
Total Inactive Members	$ 434,603	$ 471,349

ACTUARIAL VALUATION DATA

AGE AND SERVICE DISTRIBUTION

1/1/2022 Age and Service Distribution - All Active Members												
	Service	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total
Age												
Under 25		1										1
25 to 29		3	4	2								9
30 to 34			8	8	1							17
35 to 39			2	7	8							17
40 to 44				2	2	7						11
45 to 49					1	5	2	1				9
50 to 54						1	1	4				6
55 to 59				1			1	2				4
60 to 64												
65 to 69												
70 & up												
Total		4	14	20	12	13	4	7				74

ACTUARIAL FUNDING POLICIES

Actuarial Cost Method
Financing Unfunded Actuarial Accrued Liability
Actuarial Value of Assets

ACTUARIAL FUNDING POLICIES

ACTUARIAL COST METHOD

The Actuarial Cost Method allocates the projected obligations of the Plan over the working lifetimes of the Plan Members.

In accordance with the Pension Fund's Funding Policy the Actuarial Cost Method for the Recommended Contribution basis is Entry Age Normal (Level Percent of Pay). The Entry Age Normal Cost Method is a method under which the Actuarial Present Value of the projected benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age. The portion of this Actuarial Present Value allocated to a valuation year is called Normal Cost. The portion of the Actuarial Present Value not provided at an Actuarial Valuation Date by the Actuarial Present Value of future Normal Costs is called the Actuarial Accrued Liability.

The Entry Age Normal method attempts to create a level cost pattern. In contrast to other Actuarial Cost Methods which inherently lead to uneven or less predictable cost patterns, the Entry Age Normal method is generally understood to be less risky in terms of contribution stability from year to year.

The Conference of Consulting Actuaries Public Plans Community produced a "white paper" detailing Funding Policy model practices for public sector pension plans. Under the Level Cost Actuarial Methodology ("LCAM"), one of the principal elements to a Funding Policy is the Actuarial Cost Method. When deciding which Actuarial Cost Method to use, several objectives may be considered, such as the following:

- Each Member's benefit should be funded under a reasonable allocation method by the expected retirement date
- Pay-related benefit costs should reflect anticipated pay at retirement
- The expected cost of each year of service (i.e. Normal Cost) for each active Member should be reasonably related to the expected cost of that Member's benefit
- The Member's Normal Cost should emerge as a level percent of Member compensation
- No gains or losses should occur if all assumptions are met.

Following these criteria, the use of the Entry Age Normal Cost Method (Level Percent of Pay) is a model practice.

FINANCING UNFUNDED ACTUARIAL ACCRUED LIABILITY

The Unfunded Actuarial Accrued Liability may be amortized over a period either in level dollar amounts or as a level percentage of projected payroll.

When amortizing the Unfunded Actuarial Accrued Liability as a level percentage of payroll, additional risk is incurred since the amortization payments in the early years of the payment period may not be large enough to cover the interest accrued on the existing Unfunded Liability. As a result, the Unfunded

ACTUARIAL FUNDING POLICIES

Liability may increase initially, before the amortization payments grow large enough to cover all interest accruals. Generally speaking, the Plan Sponsor will be required to contribute a larger total contribution amount over the course of the funding period under a level percentage of payroll basis as compared to a level dollar payroll schedule.

The Government Finance Officers Association notes that best practices in public pension finance include utilizing amortization periods that do not exceed 20 years. Longer amortization periods elevate the risk of failing to reduce any Unfunded Liability. For example, when the amortization payment in full only covers interest on the Unfunded Liability, but does not reduce the existing Unfunded Liability, the required contribution will increase in future years.

A second principal element under the Level Cost Actuarial Methodology described above is to establish an Amortization Policy that determines the length of time and the structure of the increase or decrease in contributions required to systematically fund the Unfunded Actuarial Accrued Liability. When deciding on the Amortization Policy, several objectives may be considered, such as the following:

- Variations in the source of liability changes (i.e. gains or losses, Plan changes, assumption changes) should be funded over periods consistent with an appropriate balance between the policy objectives of demographic matching and volatility management
- The cost changes in Unfunded Actuarial Accrued Liability should emerge as a level percentage of Member compensation

The LCAM model practices for the Amortization Policy include the following:

- Layered fixed period amortization by source
- Level percent of pay amortization
- An amortization period ranging from 15-20 years for experience gains or losses
- An amortization period of 15-25 years for assumption changes

In accordance with the Pension Fund's Funding Policy for the Recommended Contribution, the Unfunded Actuarial Accrued Liability is amortized by level percent of payroll contributions to a 100% funding target over the remaining 19 years. See the *Actuarial Methods – Recommended Contribution* section of this report for more detail.

We believe that the amortization period is appropriate for the purposes of this valuation.

ACTUARIAL FUNDING POLICIES

ACTUARIAL VALUE OF ASSETS

The Pension Fund is an ongoing plan. The Employer wishes to smooth the effect of volatility in the Fair Value of Assets on the annual contribution. Therefore, the Actuarial Value of Assets is equal to the Fair Value of Assets with unanticipated gains/losses recognized over a five-year period.

The Asset Valuation Method is intended to create an Actuarial Value of Assets that remains reasonable in relation to the Fair Value of Assets over time. The method produces results that can fall either above or below the Fair Value of Assets. The period of recognition is short.

It is intended that the period of recognition is short enough to keep the Actuarial Value of Assets within a decent range of the Fair Value of Assets. In the event that the Actuarial Value of Assets exceeds or falls below a 10% corridor of the Fair Value of Assets, the additional gain or loss will be recognized immediately.

ACTUARIAL ASSUMPTIONS

Nature of Actuarial Calculations
Actuarial Assumptions in the Valuation Process
Assessment of Risk Exposures
Limitations of Risk Analysis
Assessment and Use of Actuarial Models
Actuarial Assumptions Utilized

ACTUARIAL ASSUMPTIONS

NATURE OF ACTUARIAL CALCULATIONS

The results documented in this report are estimates based on data that may be imperfect and on assumptions about future events. Certain Plan Provisions may be approximated or deemed immaterial, and, therefore, are not valued. Assumptions may be made about census data or other factors. Reasonable efforts were made in this valuation to ensure that significant items in the context of the Actuarial Accrued Liability or costs are treated appropriately, and not excluded or included inappropriately.

Actual future experience will differ from the assumptions used in the calculations. As these differences arise, the expense for accounting purposes will be adjusted in future valuations to reflect such actual experience.

A range of results different from those presented in this report could be considered reasonable. The numbers are not rounded, but this is for convenience only and should not imply precision which is not inherent in actuarial calculations.

ACTUARIAL ASSUMPTIONS IN THE VALUATION PROCESS

The contributions and benefit values of the Pension Fund are calculated by applying actuarial assumptions to the benefit provisions and census data furnished, using the Actuarial Cost Method described in the *Actuarial Funding Policies* section of this report.

The principal areas of financial risk which require assumptions about future experience are:

- Expected Rate of Return on Investments
- Patterns of Pay Increases for Members
- Rates of Mortality Among Active and Inactive Members
- Rates of Termination Among Active Members
- Rates of Disability Among Active Members
- Age Patterns of Actual Retirements

Actual experience of the Pension Fund will not coincide exactly with assumed experience. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments to the computed Recommended Contribution.

Details behind the selection of the actuarial assumptions can be found in the Actuarial Assumption Summary document provided to the client upon request. The client has reviewed and approved the assumptions as a reasonable expectation of the future anticipated experience under the Plan.

ACTUARIAL ASSUMPTIONS

ASSESSMENT OF RISK EXPOSURES

From time to time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends (but not random year-to-year fluctuations). In addition, Actuarial Standards of Practice require that the Actuary minimally perform a qualitative assessment of key financial and demographic risks as part of the risk assessment process with each annual Actuarial Valuation. The risk assessments we perform include, but are not limited to, the following:

- Periodic demographic experience studies every 3 to 5 years to confirm the ongoing appropriateness of actuarial assumptions
- Highlight the impact of demographic experience over the past year, as well as other sources of change and volatility in the *Actuarial Recommended Contribution – Reconciliation* section of this report
- Detail year-over-year changes in contribution levels, assets, liabilities, and Funded Status in the *Recommended Contribution* and *Funded Status* sections in the *Management Summary* section of this report
- Review any material changes in the census as summarized in the *Actuarial Valuation Data* section of this report
- Provide and discuss the Actuarial Assumption Summary document highlighting the rationale for each key assumption chosen by the Board
- Identify potential Cash Flow Risk by highlighting expected benefit payments over the next 5-year and 10-year periods in the *Asset Growth* section in the *Management Summary* section of this report
- Describe the impact of any assumption, method, or policy change in the *Management Summary* section of this report
- Utilize supplemental information, such as the GASB Discount Rate sensitivity disclosures to understand, for example, what impact an alternative Expected Rate of Return on Investments assumption might have on the estimation of Actuarial Accrued Liability and Funded Status
- Utilize supplemental information, such as the GASB solvency test, to better understand the Cash Flow Risk and long-term sustainability of the Plan.

LIMITATIONS OF RISK ANALYSIS

Since future experience may never be precisely as assumed, the process of selecting funding methods and actuarial assumptions may inherently create risk and volatility of results. A more detailed evaluation of the above risk exposures is beyond the scope and nature of the annual Actuarial Valuation process. For example, scenario tests, sensitivity tests, stress tests, and/or stochastic modeling for multi-year projections to assess the impact of alternative assumptions and methods, or modeling future experience different from the assumptions in these results, are not included in this Actuarial Valuation.

The Downers Grove Firefighters' Pension Fund and/or the Village of Downers Grove, Illinois should contact the Actuary if they desire a more detailed assessment of any of these forward-looking risk exposures.

ACTUARIAL ASSUMPTIONS

ASSESSMENT AND USE OF ACTUARIAL MODELS

Actuarial Valuations rely upon the use of actuarial modeling software to predict the occurrence of future events, which include specific demographic and financial potential outcomes. Actuarial assumptions are established to provide a guideline to use for such modeling.

- The model used in this Actuarial Valuation is intended to determine the Recommended Contribution, under the selected Funding Policy. The actuarial assumptions used were developed with this goal in mind.
- There are no known material limitations or inconsistencies among the actuarial assumptions or methods.
- The output from the model is reasonable based on the individual actuarial assumptions and based on the actuarial assumptions in the aggregate.
- The actuarial software used to calculate plan liabilities has been purchased from an outside vendor. We have performed thorough testing of the software, including review of sample participants, to ensure the intended purpose of the model, the operation of the model, sensitivities and dependencies, and strengths and limitations of the model are sufficient for this purpose.
- Census data and financial information have been provided by client professionals, financial advisors, and/or auditors, who are known to be experts in their respective fields. We rely on the fact that the information provided by these experts has been given for the intended purpose of this Actuarial Valuation.
- Where applicable, certain actuarial assumptions and Funding Policy may be required as prescribed by law. In such instances, we have followed legal guidance to ensure conformity.
- The Expected Rate of Return on Investments assumption has been chosen using input from several sources; including, but not limited to: client professionals, financial advisors, auditors, and other capital market outlooks. We have relied on the information provided, in the aggregate, to settle on the selected Expected Rate of Return on Investments assumption.

As stated in the *Limitations of Risk Analysis* section, future experience may never be precisely as assumed. As a result, the funding methods and actuarial assumptions used in the model may create volatility in the results when compared year after year. A more detailed evaluation of this volatility is beyond the scope and nature of the annual Actuarial Valuation process. In such cases, additional scenario tests, sensitivity tests, stress tests, and/or stochastic modeling for multi-year projections to assess the impact of alternative assumptions and methods, or modeling future experience different from the assumptions in these results, may be performed to determine a range of reasonable results.

ACTUARIAL ASSUMPTIONS

ACTUARIAL ASSUMPTIONS UTILIZED

Expected Rate of Return on Investments 7.00% Net of Administrative Expense

CPI-U 2.25%

Total Payroll Increases 3.25%

Individual Pay Increases* 3.75% - 9.71%

Individual pay increases include a long-term average increase for inflation, average annual increases for promotions, and any additional increases for a step program. Sample rates are as follows:

Service	Rate	Service	Rate
0	9.71%	8	3.75%
1	9.12%	9	3.75%
2	8.62%	10	3.75%
3	8.18%	15	3.75%
4	7.68%	20	3.75%
5	3.75%	25	3.75%
6	3.75%	30	3.75%
7	3.75%	35	3.75%

*Individual pay increases for active Members hired at age 40 or older are assumed annual increases at the ultimate rate reduced by 50 basis points, without adjustments in early service years.

ACTUARIAL ASSUMPTIONS

Retirement Rates

100% of the L&A Assumption Study for Firefighters 2020 Cap Age 65. Sample rates are as follows:

Age	Rate	Age	Rate
50	7.00%	58	17.15%
51	7.00%	59	17.15%
52	7.00%	60	20.00%
53	7.00%	61	20.00%
54	7.00%	62	20.00%
55	17.15%	63	25.00%
56	17.15%	64	25.00%
57	17.15%	65	100.00%

Termination Rates

100% of the L&A Assumption Study for Firefighters 2020. Sample rates are as follows:

Age	Rate	Age	Rate
25	7.02%	40	1.25%
30	4.07%	45	0.41%
35	2.41%	50	0.00%

Disability Rates

100% of the L&A Assumption Study for Firefighters 2020. Sample rates are as follows:

Age	Rate	Age	Rate
25	0.07%	40	0.54%
30	0.09%	45	0.75%
35	0.27%	50	0.97%

75% of active Members who become disabled are assumed to be in the Line of Duty.

ACTUARIAL ASSUMPTIONS

Mortality Rates

Active Mortality follows the Sex Distinct Raw Rates as developed in the PubS-2010(A) Study. Mortality improvement uses MP-2019 Improvement Rates applied on a fully generational basis.

50% of active Member deaths are assumed to be in the Line of Duty.

Retiree Mortality follows the L&A Assumption Study for Firefighters 2020. These rates are experience weighted with the Sex Distinct Raw Rates as developed in the PubS-2010(A) Study improved to 2017 using MP-2019 Improvement Rates. These rates are then improved fully generationally using MP-2019 Improvement Rates.

Disabled Mortality follows the L&A Assumption Study for Firefighters 2020. These rates are experience weighted with the Sex Distinct Raw Rates as developed in the PubS-2010 Study for disabled participants improved to 2017 using MP-2019 Improvement Rates. These rates are then improved fully generationally using MP-2019 Improvement Rates.

Spouse Mortality follows the Sex Distinct Raw Rates as developed in the PubS-2010(A) Study for contingent survivors. For all rates not provided there (ages 45 and younger) the PubG-2010 Study for general employees was used. Mortality improvement uses MP-2019 Improvement Rates applied on a fully generational basis.

Marital Assumptions

Active Members: 80% of active Members are assumed to be married. Female spouses are assumed to be 3 years younger than male spouses.

Retiree and Disabled Members: Actual spousal data was utilized for retiree and disabled Members.

SUMMARY OF PRINCIPAL PLAN PROVISIONS

Establishment of the Fund
Administration
Member Contributions
Regular Retirement Pension Benefit
Early Retirement Pension Benefit
Surviving Spouse Benefit
Termination Benefit – Vested
Disability Benefit

SUMMARY OF PRINCIPAL PLAN PROVISIONS

ESTABLISHMENT OF THE FUND

The Firefighters' Pension Fund is established and administered as prescribed by "Article 4 – Firefighters' Pension Fund – Municipalities 500,000 and Under" of the Illinois Pension Code.

ADMINISTRATION

The Firefighters' Pension Fund is administered by a Board of Trustees whose duties are to manage the Pension Fund, determine applications for pensions, authorize payment of pensions, establish rules, pay expenses, invest assets, and keep records.

MEMBER CONTRIBUTIONS

Members contribute 9.455% of pensionable salary.

REGULAR RETIREMENT PENSION BENEFIT

<u>Tier I</u>

Eligibility: Age 50 with at least 20 years of creditable service.

Benefit: 50% of final salary for the first 20 years of service, plus an additional 2.5% of final salary for each year of service beyond 20 years of service, pro-rated monthly, and not to exceed 75% of final salary. "Final salary" is based on the firefighter's pensionable salary attached to rank held on the last day of service.

Annual Increase in Benefit: A firefighter is entitled to receive an initial increase equal to 1/12 of 3% of the original monthly benefit for each full month that has passed since the pension began. The initial increase date will be the latter of the first day of the month after the pensioner turns age 55 or the first day of the month after the benefit date anniversary. Subsequent increases of 3% of the current monthly benefit will be granted every January 1st thereafter.

SUMMARY OF PRINCIPAL PLAN PROVISIONS

Regular Retirement Pension Benefit - Continued

Tier II

Eligibility: Age 55 with at least 10 years of creditable service.

Benefit: 2.5% of final average salary for each year of service, and not to exceed 75% of final average salary. "Final average salary" is determined by dividing the total pensionable salary during 48 consecutive months of service within the last 60 months of service in which total pensionable salary was the highest, by the number of months of service in that period (or by dividing the total pensionable salary during 96 consecutive months of service within the last 120 months of service in which total pensionable salary was the highest, by the number of months of service in that period, if greater). Annual salary for this purpose will not exceed the salary cap, indexed by the lesser of 3% or the CPI-U for the 12 months ending with the September preceding each November 1st. The salary cap will not decrease.

Annual Increase in Benefit: The initial increase date will be the latter of the January 1st after the pensioner turns age 60 or the January 1st after the benefit date anniversary. Subsequent increases will be granted every January 1st thereafter. The initial increase and subsequent increases will be the lesser of 3% of the original benefit or ½ of the CPI-U for the 12 months ending with the September preceding each November 1st.

Early Retirement Pension Benefit

Tier I

None.

Tier II

Eligibility: Age 50 with at least 10 years of creditable service.

Benefit: The regular retirement pension benefit reduced by ½ of 1% for each month that the firefighters' age is between 50 and 55.

Annual Increase in Benefit: The initial increase date will be the latter of the January 1st after the pensioner turns age 60 or the January 1st after the benefit date anniversary. Subsequent increases will be granted every January 1st thereafter. The initial increase and subsequent increases will be the lesser of 3% of the original benefit or ½ of the CPI-U for the 12 months ending with the September preceding each November 1st.

SUMMARY OF PRINCIPAL PLAN PROVISIONS

SURVIVING SPOUSE BENEFIT

Tier I

Eligibility: Married to an active firefighter, a disabled pensioner at the time of death, or a retired pensioner (at least 12 months prior to the time of death if married post-retirement).

Active Line of Duty Death Benefit: An eligible surviving spouse is entitled to receive 100% of the firefighter's final pensionable salary attached to rank held on the last day of service.

Non-Duty Death Benefit:

Disabled or Retired Pensioner: An eligible surviving spouse is entitled to receive the greater of the pensioner's benefit at the time of death or 54% of the pensioner's final pensionable salary attached to rank held on the last day of service.

Active Member: An eligible surviving spouse is entitled to receive the greater of the firefighter's eligible benefit at the time of death or 54% of the firefighter's final pensionable salary attached to rank held on the last day of service.

Annual Increase in Benefit: None.

Tier II

Eligibility: Married to an active firefighter, a disabled pensioner at the time of death, or a retired pensioner (at least 12 months prior to the time of death if married post-retirement).

Active Line of Duty Death Benefit: An eligible surviving spouse is entitled to receive 100% of the firefighter's final pensionable salary attached to rank held on the last day of service.

Non-Duty Death Benefit:

Disabled or Retired Pensioner and Active Member: An eligible surviving spouse is entitled to receive the greater of 66⅔% of the firefighter's earned pension benefit at the time of death or 54% of the firefighter's monthly salary at the time of death.

Annual Increase in Benefit: The initial increase date will be the January 1st after the surviving spouse turns age 60. Subsequent increases will be granted every January 1st thereafter. The initial increase and subsequent increases will be the lesser of 3% of the original benefit or ½ of the CPI-U for the 12 months ending with the September preceding each November 1st.

SUMMARY OF PRINCIPAL PLAN PROVISIONS

TERMINATION BENEFIT – VESTED

Tier I

Eligibility: Age 60 with at least 10 but less than 20 years of creditable service.

Benefit: An accrual factor times final salary for each year of service. "Accrual factor" is a factor of 1.5% at 10 years of service, increasing ratably up to 2.4% at 19 years of service. "Final salary" is based on the firefighter's pensionable salary attached to rank held on the last day of service.

Annual Increase in Benefit: A firefighter is entitled to receive an initial increase equal to 1/12 of 3% of the original monthly benefit for each full month that has passed since the pension began. The initial increase date will be the first day of the month after the benefit date anniversary. Subsequent increases of 3% of the current monthly benefit will be granted every January 1^{st} thereafter.

Tier II

None.

SUMMARY OF PRINCIPAL PLAN PROVISIONS

DISABILITY BENEFIT

Tier I

Eligibility: Duty Disability, Non-Duty Disability with at least 7 years of creditable service, or Occupational Disease Disability with at least 5 years of creditable service.

Benefit: For a duty disability or an occupational disease disability with at least 5 years of creditable service, a firefighter is entitled to receive the greater of 65% of final salary or the regular retirement pension benefit at the time of disability. For a non-duty disability with at least 7 years of creditable service, a firefighter is entitled to receive 50% of final salary. "Final salary" is based on the firefighter's pensionable salary attached to rank held on the last day of service.

Annual Increase in Benefit: A firefighter is entitled to receive an initial increase equal to 3% of the original monthly benefit for each full year that has passed since the pension began. The initial increase date will be the latter of the January 1st after following pensioner turns age 60 or the January 1st after the benefit date anniversary. Subsequent increases of 3% of the original monthly benefit will be granted every January 1st thereafter.

Tier II

Eligibility: Duty Disability, Non-Duty Disability with at least 7 years of creditable service, or Occupational Disease Disability with at least 5 years of creditable service.

Benefit: For a duty disability or an occupational disease disability with at least 5 years of creditable service, a firefighter is entitled to receive the greater of 65% of final salary or the regular retirement pension benefit at the time of disability. For a non-duty disability, a firefighter is entitled to receive 50% of final salary. "Final salary" is based on the firefighter's pensionable salary attached to rank held on the last day of service.

Annual Increase in Benefit: A firefighter is entitled to receive an initial increase equal to 3% of the original monthly benefit for each full year that has passed since the pension began. The initial increase date will be the latter of the January 1st after following pensioner turns age 60 or the first day of the month after the benefit date anniversary. Subsequent increases of 3% of the original monthly benefit will be granted every January 1st thereafter.

GLOSSARY OF TERMS

Glossary of Terms

GLOSSARY OF TERMS

Actuarial Accrued Liability – The Actuarial Present Value of future benefits based on Members' service rendered to the Measurement Date using the selected Actuarial Cost Method. It is that portion of the Actuarial Present Value of Plan benefits and expenses allocated to prior years of employment. It is not provided for by future Normal Costs.

Actuarial Cost Method – The method used to allocate the projected obligations of the Plan over the working lifetimes of the Plan Members.

Actuarial Value of Assets – The value of the assets used in the determination of the Unfunded Actuarial Accrued Liability. The Actuarial Value of Assets is related to Fair Value of Assets, with adjustments made to spread unanticipated gains and losses for a given year over a period of several years. Actuarial Value of Assets is generally equally likely to fall above or below the Fair Value of Assets, and generally does not experience as much volatility over time as the Fair Value of Assets.

Asset Valuation Method **–** A valuation method designed to smooth random fluctuations in asset values. The objective underlying the use of an Asset Valuation Method is to provide for the long-term stability of Employer Contributions.

Funding Policy – A set of procedures for a Pension Fund that outlines the "best practices" for funding the pension benefits based on the goals of the Plan Sponsor. A Funding Policy discusses items such as assumptions, Actuarial Cost Method, assets, and other parameters that will best help the Plan Sponsor meet their goal of working in the best interest of the Plan Members.

Fair Value of Assets – The value of the cash, bonds, securities, and other assets held in the pension trust as of the Measurement Date.

Normal Cost – The present value of future benefits earned by Members during the current Fiscal Year. It is that portion of the Actuarial Present Value of benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

Unfunded Actuarial Accrued Liability **–** The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The Unfunded Actuarial Accrued Liability is amortized over a period either in level dollar amounts or as a level percentage of projected payroll.

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Northern Trust

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FOS_202209_Downers_Grove_Portfolio_Activity_Report

FOS_202209_Stmt_DownersGrove

Downers Grove Firefighters Pension Fund
Portfolio Activity Report
From 9/1/2022 To 9/30/2022
(Report as of October 21, 2022)

Date	Name	Activity	Amount	Cash Amount	
	Client Activities:				
9/29/2022	Downers Grove	Subscription	1,120,829.49	1,120,829.49	RECEIVED USD V FIRE FIGHTERS
	Total Client Activities:		**1,120,829.49**	**1,120,829.49**	
	Investment Activities:				
9/7/2022	Illinois Firefighters Pension Investment Fund	Subscription	428.85	(428.85)	INTEREST EARN CONTRIBUTIONS
9/30/2022	Illinois Firefighters Pension Investment Fund	Subscription	1,120,829.49	(1,120,829.49)	MEMBER FUND C
	Total Investment Activities:		**1,121,258.34**	**(1,121,258.34)**	
	Total Portfolio Activities:		**2,242,087.83**	**(428.85)**	

Statement of Results

Illinois Firefighters Pension Investment Fund

Currency: USD ($)	September 2022	2022 YTD
Beginning NAVs:		
Beginning NAV	65,729,874.88	-
Contributions	1,121,258.34	77,357,689.07
Withdrawals	-	-
Net Time Weighted Activity	37,704.06	
Allocation Balance	65,767,578.94	
Allocation Percent	0.91%	
Income & Expenses:		
Unrealized Gain/Loss	-5,022,324.26	-12,032,983.02
Realized Gain/Loss	-9,949.77	-3,854,326.18
Dividend Income	40,582.03	334,737.02
Interest Income	10,248.11	81,009.72
Other Income	11.80	-3,978.92
Total Income	-4,981,432.09	-15,475,541.38
Administrator Expenses (FPIF)	6,104.79	6,104.79
Other Fee & Expenses (FPIF)	1,704.86	11,919.26
Other Expenses	31.76	
Management Fee	274.30	274.30
Performance Fee	-	-
Total Fee & Expenses	8,115.71	20,562.27
Net Income	-4,989,547.80	-15,496,103.65
Ending NAVs:		
Ending NAV	61,861,585.42	61,861,585.42
Rate of Returns:		
Return on Invested Capital	-7.59%	-21.21%
Return on Total Assets	-7.59%	-21.19%
Ownership	0.92%	

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Actuarial Funding Report

DOWNERS GROVE POLICE PENSION FUND

Actuarial Valuation
as of January 1, 2022

For the Contribution Year January 1, 2022 to December 31, 2022

LAUTERBACH & AMEN, LLP

Actuarial Valuation – Funding Recommendation

Lauterbach & Amen, LLP

CERTIFIED PUBLIC ACCOUNTANTS

DOWNERS GROVE POLICE PENSION FUND

Contribution Year Ending: December 31, 2022
Actuarial Valuation Date: January 1, 2022
Utilizing Data as of December 31, 2021

Submitted by:

Lauterbach & Amen, LLP
668 N. River Road
Naperville, IL 60563
Phone: 630.393.1483
www.lauterbachamen.com

Contact:

Todd A. Schroeder
Director
May 20, 2022

LAUTERBACH & AMEN, LLP

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ACTUARIAL CERTIFICATION

This report documents the results of the Actuarial Valuation for the Downers Grove Police Pension Fund. The information was prepared for use by the Downers Grove Police Pension Fund and the Village of Downers Grove, Illinois for determining the Recommended Contribution, under the selected Funding Policy, and the Alternative Contribution for the Contribution Year January 1, 2022 to December 31, 2022. It is not intended or suitable for other purposes. Determinations for purposes other than the Employer's Actuarial Recommended Contribution may be significantly different from the results herein.

The results in this report are based on the census data and financial information submitted by the Downers Grove Police Pension Fund, and may include results from the prior Actuary. We did not prepare the Actuarial Valuations for the years prior to January 1, 2016. Those valuations were prepared by the prior Actuary whose reports have been furnished to us, and our disclosures are based on those reports. An audit of the prior Actuary's results was not performed, but high-level reviews were completed for general reasonableness, as appropriate, based on the purpose of this valuation. The accuracy of the results is dependent on the precision and completeness of the underlying information.

In addition, the results of the Actuarial Valuation involve certain risks and uncertainty as they are based on future assumptions, market conditions, and events that may never materialize as assumed. For this reason, certain assumptions and future results may be materially different than those presented in this report. See the *Management Summary* section of this report for a more detailed discussion of the Defined Benefit Plan Risks, as well as the limitations of this Actuarial Valuation on assessing those risks. We are not aware of any known events subsequent to the Actuarial Valuation Date, which are not reflected in this report but should be valued, that may materially impact the results.

The valuation results summarized in this report involve actuarial calculations that require assumptions about future events. The Downers Grove Police Pension Fund selected certain assumptions, while others were the result of guidance and/or judgment from the Plan's Actuary or Advisors. We believe that the assumptions used in this valuation are reasonable and appropriate for the purposes for which they have been used. The selected assumptions represent our best estimate of the anticipated long-term experience of the Plan, and meet the guidelines set forth in the Actuarial Standards of Practice.

In preparing the results, our Actuaries used commercially available software (ProVal) developed by Winklevoss Technologies, LLC. This software is widely used for the purpose of performing Actuarial Valuations. Our Actuaries coded the plan provisions, assumptions, methods, and participant data summarized in this report, and reviewed the liability and cost outputs for reasonableness. We are not aware of any material weaknesses or limitations in the software, and have determined it is appropriate for performing this valuation.

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To the best of our knowledge, all calculations are in accordance with the applicable funding requirements, and the procedures followed and presentation of results conform to generally accepted actuarial principles and practices as prescribed by the Actuarial Standards Board. The undersigned consultants of Lauterbach & Amen, LLP, with actuarial credentials, meet the Qualification Standards of the American Academy of Actuaries to render this Actuarial Certification. There is no relationship between the Downers Grove Police Pension Fund and Lauterbach & Amen, LLP that impairs our objectivity.

Respectfully Submitted,

LAUTERBACH & AMEN, LLP

Todd A. Schroeder

Todd A. Schroeder, ASA, FCA, EA, MAAA

Robert L. Rietz, Jr., FCA, EA, MAAA

MANAGEMENT SUMMARY

Recommended Contribution
Funded Status
Management Summary – Comments and Analysis
Actuarial Recommended Contribution – Reconciliation

MANAGEMENT SUMMARY

RECOMMENDED CONTRIBUTION

	Prior Valuation	Current Valuation
Recommended Contribution	$4,990,964	$5,011,830
Expected Payroll	$6,742,628	$6,985,339
Recommended Contribution as a Percent of Expected Payroll	74.02%	71.75%

The Recommended Contribution has Increased by $20,866 from the Prior Valuation.

FUNDED STATUS

	Prior Valuation	Current Valuation
Normal Cost	$1,380,161	$1,396,180
Fair Value of Assets	$64,207,274	$71,136,682
Actuarial Value of Assets	$61,855,619	$66,395,317
Actuarial Accrued Liability	$119,225,664	$122,145,417
Unfunded Actuarial Accrued Liability/(Surplus)	$57,370,045	$55,750,100
Percent Funded		
Actuarial Value of Assets	51.88%	54.36%
Fair Value of Assets	53.85%	58.24%

The Percent Funded has Increased by 2.48% on an Actuarial Value of Assets Basis.

Management Summary – Comments and Analysis

Contribution Results
The Recommended Contribution is based on the selected Funding Policy and methods that are outlined in the *Actuarial Funding Policies* section of this report.

"Contribution Risk" is defined by the Actuarial Standards of Practice as the potential for actual future contributions to deviate from expected future contributions. For example, when actual contributions are not made in accordance to the Plan's Funding Policy, or when future experience deviates materially from assumed. While it is essential for the Actuary and Plan Sponsor to collaborate on implementing a sound and financially feasible Funding Policy, it is important to note that the Actuary is not required, and is not in the position to, evaluate the ability or willingness of the Plan Sponsor to make the Recommended Contribution under the selected Funding Policy.

As a result, while Contribution Risk may be a significant source of risk for the Plan, this Actuarial Valuation makes no attempt to assess the impact of future contributions falling short of those recommended under the selected Funding Policy. Notwithstanding the above, see the *Actuarial Recommended Contribution – Reconciliation* section of this report for the impact on the current Recommended Contribution of any contribution shortfalls or excesses from the prior year.

Defined Benefit Plan Risks
Asset Growth:
Pension funding involves preparing Fund assets to pay for benefits when Members retire. During their working careers, assets grow with contributions and investment earnings; and then, the Pension Fund distributes assets in retirement. Based on the Plan's current mix of Members and Funded Status, the Plan should experience positive asset growth, on average, if the Recommended Contributions are made and expected investment earnings come in. In the current year, the Fund asset growth was positive by approximately $6,929,000.

Asset growth is important in the long-term. Long-term cash flow out of the Pension Fund is primarily benefit payments, and expenses are a smaller portion. The Plan should monitor the impact of expected benefit payments on future asset growth. We assess and project all future benefit payments as part of the determination of liability. The assessment is made on all current Members of the Fund, both active and inactive. For active Members, the assessment includes the probability that Members terminate or retire and begin receiving benefits. In the next 5 years, benefit payments are anticipated to increase 20-25%, or approximately $1,487,000. In the next 10 years, the expected increase in benefit payments is 50-55%, or approximately $3,084,000. The estimated increase in benefit payments is being compared against the benefits paid to inactive Members during the fiscal year, excluding any refunds of Member Contributions.

Furthermore, plans with a large number of inactive Members have an increased "Longevity Risk". Longevity Risk is the possibility that inactive Members may live longer than projected by the Plan's mortality assumption. As shown in the previous paragraph, benefit payments are expected to increase

MANAGEMENT SUMMARY

over the next 5-year and 10-year horizons. The projected increases assume that current inactive Members pass away according to the Plan's mortality assumption. To the extent that current inactive Members live longer than expected, the future 5-year and 10-year benefit projections may be larger than the amounts disclosed in the previous paragraph. Higher levels of benefit payments, payable for a longer period of time, may cause a significant strain to the Plan's cash flow, future Recommended Contributions, and may lead to Plan insolvency.

Unfunded Liability:
Unfunded Liability represents the financial shortfall of the Actuarial Value of Assets compared to the Actuarial Accrued Liability. To the extent that Unfunded Liability exists, the Plan is losing potential investment earnings due to the financial shortfall. Contributions towards Unfunded Liability pay for the lost investment earnings, as well as the outstanding unfunded amount. If payments towards Unfunded Liability are not made, the Unfunded Liability will grow.

In the early 1990s, many Pension Funds in Illinois adopted an increasing payment towards Unfunded Liability due to a change in legislation. The initial payment decreased, and future payments are anticipated to increase annually after that. In many situations, payments early on were less than the interest on Unfunded Liability, which means that Unfunded Liability increased even though contributions were made at the recommended level.

The current Recommended Contribution includes a payment towards Unfunded Liability that is approximately $344,000 greater than the interest on Unfunded Liability. All else being equal, and contributions being made, Unfunded Liability is expected to decrease. The Employer and Fund should anticipate that improvement in the current Percent Funded will be mitigated in the short-term. The Employer and Fund should understand this impact as we progress forward to manage expectations.

Actuarial Value of Assets:
The Pension Fund smooths asset returns that vary from expectations over a 5-year period. The intention over time is that asset returns for purposes of funding recommendations are a combination of several years. The impact is intended to smooth out the volatility of Recommended Contributions over time, but not necessarily increase or decrease the level of contributions over the long-term.

When asset returns are smoothed, there are always gains or losses on the Fair Value of Assets that are going to be deferred for current funding purposes, and recognized in future years. Currently, the Pension Fund is deferring approximately $4,741,000 in gains on the Fair Value of Assets. These are asset gains that will be recognized in upcoming periods, independent of the future performance of the Fair Value of Assets.

Cash Flow Risk:
Assets, liabilities, and Funded Status are good metrics to monitor over time to assess the progress of the Funding Policy. However, these metrics may provide limited forward-looking insights. Specifically, the maturity of a Pension Fund can pose certain risks that often cannot be assessed with a point-in-time metric such as Percent Funded.

MANAGEMENT SUMMARY

For example, two different Pension Funds could have the same Percent Funded, but have completely different risk profiles. One Fund might mostly cover active Members with little to no Members in pay status, whereas a second Fund might mostly cover inactive Members with a significant level of annual benefit payments. The latter Fund has a greater "Cash Flow Risk", i.e. a more significant chance that negative cash flows could lead to a deteriorating, rather than improving, Percent Funded over time.

It is important to note that, in general, positive net cash flows are good, but also need to be sufficient to cover the growth in the liabilities (i.e. the Normal Cost as well as interest on the Actuarial Accrued Liability). Typically, when cash flows are assumed to be insufficient to cover the growth in liabilities, the Percent Funded will decline, while future Recommended Contributions will increase.

For this Plan, the Fair Value of Assets is less than the Actuarial Accrued Liability for inactive Members. The Fund assets and anticipated investment earnings are not sufficient to cover the benefits payable to the current inactive Members. In addition, there is currently no money set aside for active Member liability. There are two consequences. First, we are limiting the impact of investment earnings on accruing money for the active Members due to utilizing those dollars to pay for the current inactive Members. Second, there is Cash Flow Risk that exists in that a higher portion of the assets is needed to keep up with cash flow out for benefit payments, and a higher relative investment return is required to keep cash flow positive in any given year.

Benefit Payment Risk:
Ideally, plans in a sound financial position will have the ratio of annual benefits payments to the Fair Value of Assets to be less than the Expected Rate of Return on Investments assumption (i.e. 7.00%). Theoretically, in this case it can be considered that investment returns will fully cover the annual benefit payments, and therefore, all Employer and Member Contributions made to the Fund will be used to pay for future benefit accruals and pay down the existing Unfunded Liability. To the extent that the ratio of the annual benefit payments to the Fair Value of Assets increases to above the Expected Rate of Return on Investments assumption, the Plan may experience some additional risks, such as the need to keep assets in more liquid investments, inability to pay down Unfunded Liability, and may lead to Plan insolvency.

As of the Valuation Date, the Downers Grove Police Pension Fund has a ratio of benefit payments to the Fair Value of Assets of 8.40%. In this case, a portion of the Employer Contributions are being used to pay the annual benefit payments creating Benefit Payment Risk and Cash Flow Risk. The Percent Funded of the Plan may not grow as quickly as expected under the current Funding Policy, since the amortization payment towards the Unfunded Liability is not being fully realized. As shown in the *Asset Growth* section of this report, the 5-year and 10-year horizons of future benefit payments are expected to increase. The Plan Sponsor should monitor the percentage of annual benefit payments to the Fair Value of Assets and consider changing the Funding Policy if this ratio continues to increase.

MANAGEMENT SUMMARY

Fund Assets

The results in this report are based on the assets held in the Pension Fund. Assets consist of funds held for investment and for benefit payments as of the Actuarial Valuation Date. In addition, assets may be adjusted for other events representing dollars that are reasonably expected to be paid out from the Pension Fund or deposited into the Pension Fund after the Actuarial Valuation Date as well.

The current Fund assets are audited.

The Fund Assets Used in this Report are Audited.

The Actuarial Value of Assets under the Funding Policy is equal to the Fair Value of Assets, with unexpected gains and losses smoothed over 5 years. More detail on the Actuarial Value of Assets can be found in the *Actuarial Funding Policies* section of this report.

MANAGEMENT SUMMARY

Demographic Data

Demographic factors can change from year to year within the Pension Fund. Changes in this category include hiring new Members, Members retiring or becoming disabled, inactive Members passing away, and other changes. Demographic changes can cause an actuarial gain (contribution that is less than expected compared to the prior year) or an actuarial loss (contribution that is greater than expected compared to the prior year).

Demographic gains and losses occur when the assumptions over the one-year period for Member changes do not meet our long-term expectation. For example, if no Members become disabled during the year, we would expect a liability gain. If more Members become disabled than anticipated during the year, we would expect a liability loss. Generally, we expect short-term fluctuations in demographic experience to create gains or losses of 1%-3% of the Actuarial Accrued Liability in any given year, but to balance out in the long-term.

"Demographic Risk" occurs when Plan demographic experience differs significantly from expected. Similar to Longevity Risk discussed previously, additional risk is created when demographic experience differs from the assumed rates of disability, retirement, or termination. Under the chosen assumptions, actuarial gains and/or losses will always occur, as the assumptions will never be exactly realized. However, the magnitude of the gain and/or loss and its influence on the Recommended Contribution largely depends on the size of the Plan.

Based on the number of active Members in the Plan, the Recommended Contribution has a low risk of having a significant increase due to demographic experience. For example, 1 new disabled Member would typically generate a substantial increase to the Actuarial Accrued Liability. However, due to the size of the Plan, there is an appropriate means to absorb demographic losses without causing a significant increase to the Recommended Contribution.

In the current report, the key demographic changes were as follows:

New Hires: There were 8 Members of the Fund who were hired during the year. When a Member is admitted to the Pension Fund, the Employer Contribution will increase to reflect the new Member. The increase in the Recommended Contribution in the current year due to the new Member experience is approximately $43,600.

Retirement: There were 5 Members of the Fund who retired during the year. When a Member retires, the Normal Cost will decrease. Any change in the Actuarial Accrued Liability will be considered when determining the amount to pay towards Unfunded Liability each year. The increase in the Recommended Contribution in the current year due to the retirement experience is approximately $112,000.

Disability Conversion: There was 1 Member of the Fund who converted from duty-disabled to retired during the year. Any change in the Actuarial Accrued Liability will be considered when determining the amount to pay towards Unfunded Liability each year. The increase in the Recommended Contribution in the current year due to the conversion is approximately $26,000.

MANAGEMENT SUMMARY

Termination: There was 1 Member of the Fund who terminated employment during the year. The Fund may be obligated to pay a benefit or a refund of Employee Contributions to the Member in the future. The decrease in the Recommended Contribution in the current year due to the termination experience is approximately $3,000.

Mortality: As inactive Members age and continue to collect benefits, the Fund liability will increase. In the current year, there were 79 inactive Members who maintained their benefit collection status throughout the year. The increase in the Recommended Contribution in the current year due to the mortality experience is approximately $33,800.

Salary Increases: Salary increases were greater than anticipated in the current year. This caused an increase in the Recommended Contribution in the current year of approximately $6,300.

<u>Assumption Changes</u>
In the current valuation, we have reviewed the individual pay increases assumption to reflect the wage schedule between the Village of Downers Grove, Illinois and the Illinois Fraternal Order of Police Labor Council for the period May 1, 2021 through April 30, 2024. The year over year step increases dictated by the wage schedule did not change significantly from the prior wage schedule; therefore, we have not updated the individual pay increases assumption.

<u>Funding Policy Changes</u>
The Funding Policy was not changed from the prior valuation.

<u>Other Considerations</u>
The best due diligence continues to be the process of annually reviewing assumptions, provisions, and methodologies. Our commitment to reviewing new information regularly continues to be at the forefront of our reporting. In the current valuation, we have updated the underlying valuation software to value the most accurate estimate of Surviving Spouse benefits, including the expected Cost-of-Living Adjustments, described under the Illinois State Statutes. As a result, this caused a decrease in the Actuarial Accrued Liability of approximately $4,041,000, with a corresponding decrease in the Recommended Contribution of approximately $313,000.

MANAGEMENT SUMMARY

ACTUARIAL RECOMMENDED CONTRIBUTION – RECONCILIATION

Actuarial Accrued Liability is expected to increase each year for both interest for the year and as active Members earn additional service years towards retirement. Similarly, Actuarial Accrued Liability is expected to decrease when the Fund pays benefits to inactive Members.

Contributions are expected to increase as expected pay increases under the Funding Policy for the Fund.

	Actuarial Liability	Recommended Contribution
Prior Valuation	$ 119,225,664	$ 4,990,964
Expected Changes	3,803,232	162,207
Initial Expected Current Valuation	$ 123,028,896	$ 5,153,171

Other increases or decreases in Actuarial Accrued Liability (key changes noted below) will increase or decrease the amount of Unfunded Liability in the Plan. To the extent that Unfunded Liability increases or decreases unexpectedly, the contribution towards Unfunded Liability will also change unexpectedly.

	Actuarial Liability	Recommended Contribution
Salary Increases Greater than Expected	$ 28,775	$ 6,344
Actuarial Experience	(912,254)	(94,666)
Asset Return Greater than Expected*	-	(118,796)
Contributions Less than Expected	-	65,777
Total Increase/(Decrease)	$ (883,479)	$ (141,341)
Current Valuation	$ 122,145,417	$ 5,011,830

*Impact on the Recommended Contribution due to asset return is on an Actuarial Value of Assets basis.

The Actuarial Experience can be attributable to several factors including Actuarial Valuation software changes, demographic changes, and benefit payment experience compared to expectation. Key demographic changes were discussed in the *Demographic Data* section of this report.

VALUATION OF FUND ASSETS

Fair Value of Assets
Fair Value of Assets (Gain)/Loss
Development of the Actuarial Value of Assets
Actuarial Value of Assets (Gain)/Loss
Historical Asset Performance

VALUATION OF FUND ASSETS

FAIR VALUE OF ASSETS

Statement of Assets

	Prior Valuation	Current Valuation
Cash and Cash Equivalents	$ 899,290	$ 1,755,866
Money Market	1,376,222	941,903
Fixed Income	22,085,555	23,318,432
Insurance Contracts	7,011,450	-
Insurance Co Contracts - Separate	-	8,067,996
Stock Equities	4,910,484	5,301,439
Mutual Funds	27,761,964	31,627,254
Receivables (Net of Payables)	162,309	123,792
Total Fair Value of Assets	$ 64,207,274	$ 71,136,682

The Total Fair Value of Assets has Increased by Approximately $6,929,000 from the Prior Valuation.

Statement of Changes in Assets

Total Fair Value of Assets - Prior Valuation	$ 64,207,274
Plus - Employer Contributions	4,043,525
Plus - Member Contributions	741,458
Plus - Return on Investments	8,170,641
Less - Benefit Payments and Refunds	(5,977,164)
Less - Other Expenses	(49,052)
Total Fair Value of Assets - Current Valuation	$ 71,136,682

The Rate of Return on Investments on a Fair Value of Assets Basis for the Fund was Approximately 12.77% Net of Administrative Expense.

The Rate of Return on Investments shown above has been determined as a percent of the average of the prior and current Fair Value of Assets on the Statement of Changes in Assets. The Return on Investments is net of Other Expenses, and has been excluded from the Total Fair Value of Assets at the end of the Fiscal Year for this calculation.

VALUATION OF FUND ASSETS

FAIR VALUE OF ASSETS (GAIN)/LOSS

Current Year (Gain)/Loss on Fair Value of Assets

Total Fair Value of Assets - Prior Valuation	$ 64,207,274
Employer and Member Contributions	4,784,983
Benefit Payments and Refunds	(5,977,164)
Expected Return on Investments	4,452,782
Expected Total Fair Value of Assets - Current Valuation	$ 67,467,875
Actual Total Fair Value of Assets - Current Valuation	71,136,682
Current Fair Value of Assets (Gain)/Loss	$ (3,668,807)

Expected Return on Investments	$ 4,452,782
Actual Return on Investments (Net of Expenses)	8,121,589
Current Fair Value of Assets (Gain)/Loss	$ (3,668,807)

The Actual Return on Investments on a Fair Value of Assets Basis was Greater than Expected for the Current Year.

The (Gain)/Loss on the current Fair Value of Assets has been determined based on the Expected Rate of Return on Investments as shown in the *Actuarial Assumptions* section of this report.

VALUATION OF FUND ASSETS

DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS

Total Fair Value of Assets - Current Valuation			$ 71,136,682
Adjustment for Prior (Gains)/Losses			
		Full Amount	Deferral
	FYE 2021	$ (3,668,807)	(2,935,046)
	FYE 2020	(2,256,901)	(1,354,141)
	FYE 2019	(4,299,167)	(1,719,667)
	FYE 2018	6,337,446	1,267,489
Total Deferred (Gain)/Loss			(4,741,365)
Initial Actuarial Value of Assets - Current Valuation			$ 66,395,317
Less Contributions for the Current Year and Interest			-
Adjustment for the Corridor			-
Total Actuarial Value of Assets - Current Valuation			$ 66,395,317

The Actuarial Value of Assets is Equal to the Fair Value of Assets with Unanticipated (Gains)/Losses Recognized Over 5 Years. The Actuarial Value of Assets is 93.33% of the Fair Value of Assets.

ACTUARIAL VALUE OF ASSETS (GAIN)/LOSS

Total Actuarial Value of Assets - Prior Valuation	$ 61,855,619
Plus - Employer Contributions	4,043,525
Plus - Member Contributions	741,458
Plus - Return on Investments	5,780,931
Less - Benefit Payments and Refund	(5,977,164)
Less - Other Expenses	(49,052)
Total Actuarial Value of Assets - Current Valuation	$ 66,395,317

The Rate of Return on Investments on an Actuarial Value of Assets Basis for the Fund was Approximately 9.36% Net of Administrative Expense.

The Actuarial Value of Assets incorporates portions of gains and losses over multiple years.

VALUATION OF FUND ASSETS

HISTORICAL ASSET PERFORMANCE

The chart below shows the historical Rates of Return on Investments for both Fair Value of Assets and Actuarial Value of Assets.

	Fair Value of Assets	Actuarial Value of Assets
FYE 2021	12.77%	9.36%
FYE 2020	10.86%	7.76%
FYE 2019	15.30%	5.00%
FYE 2018	(4.47%)	3.28%
FYE 2017	12.03%	6.24%
FYE 2016	5.77%	5.77%
FYE 2015	(0.40%)	5.70%

The historical Rates of Return on Investments shown above were calculated based on the annual Return on Investments, as a percentage of the average value of the assets for the year.

For purposes of determining the average value of assets for the year, the ending Fair Value of Assets has been adjusted to net out to the portion related to the Return on Investments themselves. All other cash flows are included.

For purposes of determining the annual Return on Investments we have adjusted the figures shown on the preceding pages. The figures shown on the preceding pages are net of Investment Expenses. We have made an additional adjustment to net out Administrative Expenses. Netting out Administrative Expenses allows us to capture returns for the year that can be used to make benefit payments as part of the ongoing actuarial process.

The adjustments we made are for actuarial reporting purposes only. By netting out Administrative Expenses and capturing Return on Investments that are available to pay benefits, it provides us a comparison to the Expected Rate of Return on Investments, but does not provide a figure that would be consistent with the rates of return that are determined by other parties. Therefore, this calculated Return on Investments should not be used to analyze investment performance of the Fund or the performance of the investment professionals.

VALUATION OF FUND ASSETS

Expected Rate of Return on Investments Assumption

The Expected Rate of Return on Investments for this valuation is 7.00%. Lauterbach & Amen, LLP does not provide investment advice. We look at a variety of factors when reviewing the Expected Rate of Return on Investments assumption selected by the Board. These factors include: historical Rates of Return on Investments, capital market projections performed by the Fund's investment advisors, the Fund's investment policy, capital market forward-looking benchmark expected returns by independent investment companies, rates used by comparable pension systems, and other factors identified in the Actuarial Standards of Practice.

Generally speaking, the ideal assumption for Expected Rate of Return on Investments is one that has a 50% chance of being met over the long-term. If actual returns going forward come in less than expected, the pension system risks deferring contributions to the future that should be made today and creating additional contribution volatility. Reducing the Expected Rate of Return on Investments by 25 basis points produces a Recommended Contribution that is 6.22% higher than currently shown.

"Investment Risk" is the potential that actual Return on Investments will be different from what is expected. The selected Expected Rate of Return on Investments assumption is chosen to be a long-term assumption, producing a return that, on average, would produce a stable rate of return over a long-term horizon. Actual asset returns in the short-term may deviate from this long-term assumption due to current market conditions. Furthermore, establishing the Expected Rate of Return on Investments assumption may be dependent on the Illinois State Statutes pertaining to the limitations on types of investments Plan Sponsors may use. If the actual annual rates of return are less than the Expected Rate of Return on Investments, actuarial losses will be produced, thus increasing the Plan's Unfunded Liability and, subsequently, future Recommended Contributions.

"Asset/Liability Mismatch" risk is a similar concept as Investment Risk, as it relates to setting the Expected Rate of Return on Investments assumption compared to the actual Return on Investments achieved. The Interest Rate used to discount future Plan liabilities is set equal to the Expected Rate of Return on Investments. It is expected that the selected Interest Rate be a rate that is reasonably expected to be achieved over the long-term. To the extent that the selected Interest Rate to value Plan liabilities is unreasonable, or significantly different than the actual Return on Investments earned over an extended period of time, additional Interest Rate risk is created. For example, determining Plan liabilities at an Interest Rate higher than what is expected to be achieved through investment returns results in Unfunded Liability that is not a true representation of the Plan's condition and Percent Funded. As a result, the Actuarial Accrued Liability determined is an amount smaller than the liability that would be produced with an Interest Rate more indicative of future Expected Rate of Return on Investments. Therefore, the Recommended Contributions under the established Funding Policy may not be sufficient to appropriately meet the true pension obligations.

RECOMMENDED CONTRIBUTION DETAIL

Actuarial Accrued Liability
Funded Status
Development of the Employer Normal Cost
Normal Cost as a Percentage of Expected Payroll
Recommended Contribution Breakdown
Schedule of Amortization – Unfunded Actuarial Accrued Liability
Actuarial Methods – Recommended Contribution

RECOMMENDED CONTRIBUTION DETAIL

ACTUARIAL ACCRUED LIABILITY

	Prior Valuation	Current Valuation
Active Members	$ 31,565,470	$ 27,957,614
Inactive Members		
Terminated Members	547,732	577,314
Retired Members	74,084,182	81,673,335
Disabled Members	9,678,219	8,734,007
Other Beneficiaries	3,350,061	3,203,147
Total Inactive Members	87,660,194	94,187,803
Total Actuarial Accrued Liability	$ 119,225,664	$ 122,145,417

The Total Actuarial Accrued Liability has Increased by Approximately $2,920,000 from the Prior Valuation.

FUNDED STATUS

	Prior Valuation	Current Valuation
Total Actuarial Accrued Liability	$ 119,225,664	$ 122,145,417
Total Actuarial Value of Assets	61,855,619	66,395,317
Unfunded Actuarial Accrued Liability	$ 57,370,045	$ 55,750,100
Total Fair Value of Assets	$ 64,207,274	$ 71,136,682
Percent Funded		
Actuarial Value of Assets	51.88%	54.36%
Fair Value of Assets	53.85%	58.24%

The Percent Funded as of the Actuarial Valuation Date is Subject to Volatility on Assets and Liability in the Short-Term.

RECOMMENDED CONTRIBUTION DETAIL

DEVELOPMENT OF THE EMPLOYER NORMAL COST

	Prior Valuation	Current Valuation
Total Normal Cost	$ 1,380,161	$ 1,396,180
Estimated Member Contributions	(657,510)	(681,178)
Employer Normal Cost	$ 722,651	$ 715,002

At a 100% Funding Level, the Normal Cost Contribution is Still Required.

NORMAL COST AS A PERCENTAGE OF EXPECTED PAYROLL

	Prior Valuation	Current Valuation
Expected Payroll	$ 6,742,628	$ 6,985,339
Member Normal Cost Rate	9.910%	9.910%
Employer Normal Cost Rate	10.56%	10.08%
Total Normal Cost Rate	20.47%	19.99%

Ideally, the Employer Normal Cost Rate will Remain Stable.

RECOMMENDED CONTRIBUTION BREAKDOWN

	Prior Valuation	Current Valuation
Employer Normal Cost*	$ 773,237	$ 765,052
Amortization of Unfunded Accrued Liability/(Surplus)	4,217,727	4,246,778
Recommended Contribution	$ 4,990,964	$ 5,011,830

The Recommended Contribution has Increased by 0.42% from the Prior Valuation.

*Employer Normal Cost Contribution includes interest through the end of the Fiscal Year.

RECOMMENDED CONTRIBUTION DETAIL

SCHEDULE OF AMORTIZATION – UNFUNDED ACTUARIAL ACCRUED LIABILITY

Below is the schedule of remaining amortization balances for the Unfunded Liability.

Unfunded Liability Base	Initial Balance	Date Established	Current Balance	Years Remaining	Payment
Investment (Gain)/Loss	$ (1,559,512)	12/31/2021	$ (1,559,512)	19	$ (118,796)
Actuarial (Gain)/Loss	294,917	12/31/2021	294,917	19	22,465
Contribution Experience	(153,525)	12/31/2021	(153,525)	19	(11,695)
Investment (Gain)/Loss	(543,042)	12/31/2020	(541,132)	19	(41,221)
Actuarial (Gain)/Loss	2,035,534	12/31/2020	2,028,374	19	154,513
Contribution Experience	(28,360)	12/31/2020	(28,260)	19	(2,153)
Investment (Gain)/Loss	1,046,370	12/31/2019	1,041,517	19	79,338
Actuarial (Gain)/Loss	2,498,675	12/31/2019	2,487,086	19	189,454
Contribution Experience	(31,067)	12/31/2019	(30,923)	19	(2,356)
Assumption Changes	3,252,163	12/31/2019	3,237,079	19	246,585
Plan Changes	367,386	12/31/2019	365,682	19	27,856
Investment (Gain)/Loss	1,930,175	12/31/2018	1,926,120	19	146,723
Actuarial (Gain)/Loss	4,218,794	12/31/2018	4,209,930	19	320,692
Contribution Experience	(29,441)	12/31/2018	(29,379)	19	(2,238)
Initial Unfunded Liability	$ 42,591,615	12/31/2018	$ 42,502,126	19	$ 3,237,611
Total	$ 55,890,682		$ 55,750,100		$ 4,246,778

The Actuarial (Gain)/Loss can be attributable to several factors including Actuarial Valuation software changes, demographic changes, Employer Contribution timing, Member Contribution experience, benefit payment experience, and salary increase experience compared to expectation.

RECOMMENDED CONTRIBUTION DETAIL

ACTUARIAL METHODS – RECOMMENDED CONTRIBUTION

Actuarial Valuation Date	January 1, 2022
Data Collection Date	December 31, 2021
Actuarial Cost Method	Entry Age Normal (Level % Pay)
Amortization Method	Level % Pay (Closed)
Amortization Target	100% Funded Over 19 Years
Asset Valuation Method	5-Year Smoothed Fair Value

The contributions and benefit values of the Pension Fund are calculated by applying actuarial assumptions to the benefit provisions and census data furnished, using the Actuarial Cost Method described. The Actuarial Cost and Amortization Methods allocate the projected obligations of the Plan over the working lifetimes of the Plan Members.

The Recommended Contribution amount shown in this report is based on the methods summarized above. The *Actuarial Funding Policies* section of this report includes a more detailed description of the Actuarial Funding Methods being used.

The Actuarial Funding Methods are meant to provide a systematic process for determining contributions on an annual basis. The methods do not impact the expectation of future benefit payments. The methods only impact the way contributions are made towards future benefit payments.

Different Actuarial Funding Methods may achieve funding goals with differing levels of success. Certain methods are more efficient and more stable on an annual basis.

ALTERNATIVE CONTRIBUTION

Alternative Contribution
Funded Status – Alternative Contribution
Actuarial Methods – Alternative Contribution

ALTERNATIVE CONTRIBUTION

ALTERNATIVE CONTRIBUTION

	Current Valuation
Alternative Contribution	$4,203,272
Expected Payroll	$6,985,339
Alternative Contribution as a Percent of Expected Payroll	60.17%

FUNDED STATUS – ALTERNATIVE CONTRIBUTION

	Current Valuation
Normal Cost	$1,430,014
Fair Value of Assets	$71,136,682
Actuarial Value of Assets	$66,395,317
Actuarial Accrued Liability	$123,395,080
Unfunded Actuarial Accrued Liability/(Surplus)	$56,999,763
Percent Funded	
Actuarial Value of Assets	53.81%
Fair Value of Assets	57.65%

ALTERNATIVE CONTRIBUTION

The Alternative Contribution is based on Actuarial Funding Methods and funding parameters outlined in the Illinois State Statutes for pension funding. The resulting contribution is lower than the Recommended Contribution for the current year. The Alternative Contribution amount is not recommended because it represents only a deferral of contributions when compared to the Recommended Contribution method.

Actuarial Funding Methods for pensions are best applied to provide a balance between the long-term goals of a variety of stakeholders:

1. Members – the Members are interested in benefit security and having the funds available to pay benefits when retired

2. Employers – cost control and cost stability over the long-term

3. Taxpayers – paying for the services they are receiving from active Members

The Alternative Contribution methods are not intended to provide a better system in any of the above categories long-term. The parameters are not recommended for a long-term funding strategy.

The funding methods and parameters put into place in the Illinois State Statutes in 2011 were intended to provide short-term budget relief for Employer Contributions. An Employer using the parameters outlined in the Illinois State Statutes for current funding should view the contributions as short-term relief. Our recommendation in this situation is for a Pension Fund and an Employer to work towards a long-term funding strategy that better achieves the long-term funding goals, over a period that does not exceed 3-5 years.

The Securities and Exchange Commission in 2013 used the phrase "Statutory Underfunding" to describe situations where contributions appear to be more manageable in the short-term, but set up future Recommended Contributions that are less likely to be manageable.

ALTERNATIVE CONTRIBUTION

ACTUARIAL METHODS – ALTERNATIVE CONTRIBUTION

Actuarial Valuation Date	January 1, 2022
Data Collection Date	December 31, 2021
Actuarial Cost Method	Projected Unit Credit
Amortization Method	Level % Pay (Closed)
Amortization Target	90% Funded Over 19 Years
Asset Valuation Method	5-Year Smoothed Fair Value

The contribution and benefit values of the Pension Fund are calculated by applying actuarial assumptions to the benefit provisions and census data furnished, using the Actuarial Cost Method described. The Actuarial Cost and Amortization methods allocate the projected obligations of the Plan over the working lifetimes of the Plan Members.

The Actuarial Funding Methods are meant to provide a systematic process for determining contributions on an annual basis. The methods do not impact the expectation of future benefit payments. The methods only impact the way contributions are made towards future benefit payments.

Different Actuarial Funding Methods may achieve funding goals with differing levels of success. Certain methods are more efficient and more stable on an annual basis.

The guidelines in the Illinois State Statutes for pension funding are silent on the use of a corridor on the Fair Value of Assets in determination of the Actuarial Value of Assets. In the current valuation, the Plan Sponsor has elected to use a 10% corridor in the determination of the Actuarial Value of Assets for both the Alternative Contribution and the Recommended Contribution. In the event that the Actuarial Value of Assets exceeds 110% of the Fair Value of Assets or falls below 90% of the Fair Value of Assets, the excess gains or losses will be recognized immediately.

ACTUARIAL VALUATION DATA

Active Members
Inactive Members
Summary of Monthly Benefit Payments
Age and Service Distribution

ACTUARIAL VALUATION DATA

ACTIVE MEMBERS

	Prior Valuation	Current Valuation
Tier I	37	32
Tier II	29	36
Total Active Members	66	68
Total Payroll	$ 6,634,812	$ 6,873,642

INACTIVE MEMBERS

	Prior Valuation	Current Valuation
Terminated Members	20	24
Retired Members	59	65
Disabled Members	11	10
Other Beneficiaries	10	10
Total Inactive Members	100	109

SUMMARY OF MONTHLY BENEFIT PAYMENTS

	Prior Valuation	Current Valuation
Retired Members	$ 376,551	$ 430,457
Disabled Members	55,467	50,928
Other Beneficiaries	37,416	37,416
Total Inactive Members	$ 469,433	$ 518,801

ACTUARIAL VALUATION DATA

AGE AND SERVICE DISTRIBUTION

1/1/2022 Age and Service Distribution - All Active Members											
	Service	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total
Age												
Under 25		2	1									3
25 to 29		4	7	1								12
30 to 34		2	7	7								16
35 to 39			3	2	3							8
40 to 44						7	7					14
45 to 49						3	4	1				8
50 to 54						2	2	3				7
55 to 59												
60 to 64												
65 to 69												
70 & up												
Total		8	18	10	3	12	13	4				68

ACTUARIAL FUNDING POLICIES

Actuarial Cost Method
Financing Unfunded Actuarial Accrued Liability
Actuarial Value of Assets

ACTUARIAL FUNDING POLICIES

ACTUARIAL COST METHOD

The Actuarial Cost Method allocates the projected obligations of the Plan over the working lifetimes of the Plan Members.

In accordance with the Pension Fund's Funding Policy the Actuarial Cost Method for the Recommended Contribution basis is Entry Age Normal (Level Percent of Pay). The Entry Age Normal Cost Method is a method under which the Actuarial Present Value of the projected benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age. The portion of this Actuarial Present Value allocated to a valuation year is called Normal Cost. The portion of the Actuarial Present Value not provided at an Actuarial Valuation Date by the Actuarial Present Value of future Normal Costs is called the Actuarial Accrued Liability.

The Entry Age Normal method attempts to create a level cost pattern. In contrast to other Actuarial Cost Methods which inherently lead to uneven or less predictable cost patterns, the Entry Age Normal method is generally understood to be less risky in terms of contribution stability from year to year.

The Conference of Consulting Actuaries Public Plans Community produced a "white paper" detailing Funding Policy model practices for public sector pension plans. Under the Level Cost Actuarial Methodology ("LCAM"), one of the principal elements to a Funding Policy is the Actuarial Cost Method. When deciding which Actuarial Cost Method to use, several objectives may be considered, such as the following:

- Each Member's benefit should be funded under a reasonable allocation method by the expected retirement date
- Pay-related benefit costs should reflect anticipated pay at retirement
- The expected cost of each year of service (i.e. Normal Cost) for each active Member should be reasonably related to the expected cost of that Member's benefit
- The Member's Normal Cost should emerge as a level percent of Member compensation
- No gains or losses should occur if all assumptions are met.

Following these criteria, the use of the Entry Age Normal Cost Method (Level Percent of Pay) is a model practice.

FINANCING UNFUNDED ACTUARIAL ACCRUED LIABILITY

The Unfunded Actuarial Accrued Liability may be amortized over a period either in level dollar amounts or as a level percentage of payroll.

When amortizing the Unfunded Actuarial Accrued Liability as a level percentage of payroll, additional risk is incurred since the amortization payments in the early years of the payment period may not be large enough to cover the interest accrued on the existing Unfunded Liability. As a result, the Unfunded

ACTUARIAL FUNDING POLICIES

Liability may increase initially, before the amortization payments grow large enough to cover all interest accruals. Generally speaking, the Plan Sponsor will be required to contribute a larger total contribution amount over the course of the funding period under a level percentage of payroll basis as compared to a level dollar payroll schedule.

The Government Finance Officers Association notes that best practices in public pension finance include utilizing amortization periods that do not exceed 20 years. Longer amortization periods elevate the risk of failing to reduce any Unfunded Liability. For example, when the amortization payment in full only covers interest on the Unfunded Liability, but does not reduce the existing Unfunded Liability, the required contribution will increase in future years.

A second principal element under the Level Cost Actuarial Methodology described above is to establish an Amortization Policy that determines the length of time and the structure of the increase or decrease in contributions required to systematically fund the Unfunded Actuarial Accrued Liability. When deciding on the Amortization Policy, several objectives may be considered, such as the following:

- Variations in the source of liability changes (i.e. gains or losses, Plan changes, assumption changes) should be funded over periods consistent with an appropriate balance between the policy objectives of demographic matching and volatility management
- The cost changes in Unfunded Actuarial Accrued Liability should emerge as a level percentage of Member compensation

The LCAM model practices for the Amortization Policy include the following:

- Layered fixed period amortization by source
- Level percent of pay amortization
- An amortization period ranging from 15-20 years for experience gains or losses
- An amortization period of 15-25 years for assumption changes

In accordance with the Pension Fund's Funding Policy for the Recommended Contribution, the Unfunded Actuarial Accrued Liability is amortized by level percent of payroll contributions to a 100% funding target over the remaining 19 years. See the *Actuarial Methods – Recommended Contribution* section of this report for more detail.

We believe that the amortization period is appropriate for the purposes of this valuation.

ACTUARIAL VALUE OF ASSETS

The Pension Fund is an ongoing plan. The Employer wishes to smooth the effect of volatility in the Fair Value of Assets on the annual contribution. Therefore, the Actuarial Value of Assets is equal to the Fair Value of Assets with unanticipated gains/losses recognized over a five-year period.

ACTUARIAL FUNDING POLICIES

The Asset Valuation Method is intended to create an Actuarial Value of Assets that remains reasonable in relation to the Fair Value of Assets over time. The method produces results that can fall either above or below the Fair Value of Assets. The period of recognition is short.

It is intended that the period of recognition is short enough to keep the Actuarial Value of Assets within a decent range of the Fair Value of Assets. In the event that the Actuarial Value of Assets exceeds or falls below a 10% corridor of the Fair Value of Assets, the additional gain or loss will be recognized immediately.

ACTUARIAL ASSUMPTIONS

Nature of Actuarial Calculations
Actuarial Assumptions in the Valuation Process
Assessment of Risk Exposures
Limitations of Risk Analysis
Assessment and Use of Actuarial Models
Actuarial Assumptions Utilized

ACTUARIAL ASSUMPTIONS

NATURE OF ACTUARIAL CALCULATIONS

The results documented in this report are estimates based on data that may be imperfect and on assumptions about future events. Certain Plan Provisions may be approximated or deemed immaterial, and, therefore, are not valued. Assumptions may be made about census data or other factors. Reasonable efforts were made in this valuation to ensure that significant items in the context of the Actuarial Accrued Liability or costs are treated appropriately, and not excluded or included inappropriately.

Actual future experience will differ from the assumptions used in the calculations. As these differences arise, the expense for accounting purposes will be adjusted in future valuations to reflect such actual experience.

A range of results different from those presented in this report could be considered reasonable. The numbers are not rounded, but this is for convenience only and should not imply precision which is not inherent in actuarial calculations.

ACTUARIAL ASSUMPTIONS IN THE VALUATION PROCESS

The contributions and benefit values of the Pension Fund are calculated by applying actuarial assumptions to the benefit provisions and census data furnished, using the Actuarial Cost Method described in the *Actuarial Funding Policies* section of this report.

The principal areas of financial risk which require assumptions about future experience are:

- Expected Rate of Return on Investments
- Patterns of Pay Increases for Members
- Rates of Mortality Among Active and Inactive Members
- Rates of Termination Among Active Members
- Rates of Disability Among Active Members
- Age Patterns of Actual Retirements

Actual experience of the Pension Fund will not coincide exactly with assumed experience. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments to the computed Recommended Contribution.

Details behind the selection of the actuarial assumptions can be found in the Actuarial Assumption Summary document provided to the client upon request. The client has reviewed and approved the assumptions as a reasonable expectation of the future anticipated experience under the Plan.

ACTUARIAL ASSUMPTIONS

ASSESSMENT OF RISK EXPOSURES

From time to time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends (but not random year-to-year fluctuations). In addition, Actuarial Standards of Practice require that the Actuary minimally perform a qualitative assessment of key financial and demographic risks as part of the risk assessment process with each annual Actuarial Valuation. The risk assessments we perform include, but are not limited to, the following:

- Periodic demographic experience studies every 3 to 5 years to confirm the ongoing appropriateness of actuarial assumptions
- Highlight the impact of demographic experience over the past year, as well as other sources of change and volatility in the *Actuarial Recommended Contribution – Reconciliation* section of this report
- Detail year-over-year changes in contribution levels, assets, liabilities, and Funded Status in the *Recommended Contribution* and *Funded Status* sections in the *Management Summary* section of this report
- Review any material changes in the census as summarized in the *Actuarial Valuation Data* section of this report
- Provide and discuss the Actuarial Assumption Summary document highlighting the rationale for each key assumption chosen by the Board
- Identify potential Cash Flow Risk by highlighting expected benefit payments over the next 5-year and 10-year periods in the *Asset Growth* section in the *Management Summary* section of this report
- Describe the impact of any assumption, method, or policy change in the *Management Summary* section of this report
- Utilize supplemental information, such as the GASB Discount Rate sensitivity disclosures to understand, for example, what impact an alternative Expected Rate of Return on Investments assumption might have on the estimation of Actuarial Accrued Liability and Funded Status
- Utilize supplemental information, such as the GASB solvency test, to better understand the Cash Flow Risk and long-term sustainability of the Plan.

LIMITATIONS OF RISK ANALYSIS

Since future experience may never be precisely as assumed, the process of selecting funding methods and actuarial assumptions may inherently create risk and volatility of results. A more detailed evaluation of the above risk exposures is beyond the scope and nature of the annual Actuarial Valuation process. For example, scenario tests, sensitivity tests, stress tests, and/or stochastic modeling for multi-year projections to assess the impact of alternative assumptions and methods, or modeling future experience different from the assumptions in these results, are not included in this Actuarial Valuation.

The Downers Grove Police Pension Fund and/or the Village of Downers Grove, Illinois should contact the Actuary if they desire a more detailed assessment of any of these forward-looking risk exposures.

ACTUARIAL ASSUMPTIONS

Assessment and Use of Actuarial Models

Actuarial Valuations rely upon the use of actuarial modeling software to predict the occurrence of future events, which include specific demographic and financial potential outcomes. Actuarial assumptions are established to provide a guideline to use for such modeling.

- The model used in this Actuarial Valuation is intended to determine the Recommended Contribution, under the selected Funding Policy. The actuarial assumptions used were developed with this goal in mind.
- There are no known material limitations or inconsistencies among the actuarial assumptions or methods.
- The output from the model is reasonable based on the individual actuarial assumptions and based on the actuarial assumptions in the aggregate.
- The actuarial software used to calculate plan liabilities has been purchased from an outside vendor. We have performed thorough testing of the software, including review of sample participants, to ensure the intended purpose of the model, the operation of the model, sensitivities and dependencies, and strengths and limitations of the model are sufficient for this purpose.
- Census data and financial information have been provided by client professionals, financial advisors, and/or auditors, who are known to be experts in their respective fields. We rely on the fact that the information provided by these experts has been given for the intended purpose of this Actuarial Valuation.
- Where applicable, certain actuarial assumptions and Funding Policy may be required as prescribed by law. In such instances, we have followed legal guidance to ensure conformity.
- The Expected Rate of Return on Investments assumption has been chosen using input from several sources; including, but not limited to: client professionals, financial advisors, auditors, and other capital market outlooks. We have relied on the information provided, in the aggregate, to settle on the selected Expected Rate of Return on Investments assumption.

As stated in the *Limitations of Risk Analysis* section, future experience may never be precisely as assumed. As a result, the funding methods and actuarial assumptions used in the model may create volatility in the results when compared year after year. A more detailed evaluation of this volatility is beyond the scope and nature of the annual Actuarial Valuation process. In such cases, additional scenario tests, sensitivity tests, stress tests, and/or stochastic modeling for multi-year projections to assess the impact of alternative assumptions and methods, or modeling future experience different from the assumptions in these results, may be performed to determine a range of reasonable results.

ACTUARIAL ASSUMPTIONS

ACTUARIAL ASSUMPTIONS UTILIZED

Expected Rate of Return on Investments 7.00% Net of Administrative Expense

CPI-U 2.25%

Total Payroll Increases 3.25%

Individual Pay Increases* 3.75% - 8.36%

Individual pay increases include a long-term average increase for inflation, average annual increases for promotions, and any additional increases for a step program. Sample rates are as follows:

Service	Rate	Service	Rate
0	7.70%	8	3.75%
1	8.36%	9	3.75%
2	8.08%	10	3.75%
3	7.88%	15	3.75%
4	7.76%	20	3.75%
5	7.66%	25	3.75%
6	8.18%	30	3.75%
7	3.75%	35	3.75%

*Individual pay increases for active Members hired at age 40 or older are assumed annual increases at the ultimate rate reduced by 50 basis points, without adjustments in early service years.

ACTUARIAL ASSUMPTIONS

Retirement Rates

100% of the L&A Assumption Study for Police 2020 Cap Age 65. Sample rates are as follows:

Age	Rate	Age	Rate
50	11.00%	58	16.25%
51	11.55%	59	16.25%
52	12.13%	60	16.25%
53	12.73%	61	16.25%
54	13.37%	62	18.00%
55	14.04%	63	20.00%
56	14.74%	64	20.00%
57	15.48%	65	100.00%

Termination Rates

100% of the L&A Assumption Study for Police 2020. Sample rates are as follows:

Age	Rate	Age	Rate
25	8.00%	40	2.17%
30	3.40%	45	1.56%
35	2.79%	50	0.46%

Disability Rates

100% of the L&A Assumption Study for Police 2020. Sample rates are as follows:

Age	Rate	Age	Rate
25	0.00%	40	0.38%
30	0.06%	45	0.53%
35	0.18%	50	0.48%

65% of active Members who become disabled are assumed to be in the Line of Duty.

ACTUARIAL ASSUMPTIONS

Mortality Rates

Active Mortality follows the Sex Distinct Raw Rates as developed in the PubS-2010(A) Study. Mortality improvement uses MP-2019 Improvement Rates applied on a fully generational basis.

50% of active Member deaths are assumed to be in the Line of Duty.

Retiree Mortality follows the L&A Assumption Study for Police 2020. These rates are experience weighted with the Sex Distinct Raw Rates as developed in the PubS-2010(A) Study improved to 2017 using MP-2019 Improvement Rates. These rates are then improved fully generationally using MP-2019 Improvement Rates.

Disabled Mortality follows the Sex Distinct Raw Rates as developed in the PubS-2010 Study for disabled participants. Mortality improvement uses MP-2019 Improvement Rates applied on a fully generational basis.

Spouse Mortality follows the Sex Distinct Raw Rates as developed in the PubS-2010(A) Study for contingent survivors. For all rates not provided there (ages 45 and younger) the PubG-2010 Study for general employees was used. Mortality improvement uses MP-2019 Improvement Rates applied on a fully generational basis.

Marital Assumptions

Active Members: 80% of active Members are assumed to be married. Female spouses are assumed to be 3 years younger than male spouses.

Retiree and Disabled Members: Actual spousal data was utilized for retiree and disabled Members.

SUMMARY OF PRINCIPAL PLAN PROVISIONS

Establishment of the Fund
Administration
Member Contributions
Regular Retirement Pension Benefit
Early Retirement Pension Benefit
Surviving Spouse Benefit
Termination Benefit – Vested
Disability Benefit

SUMMARY OF PRINCIPAL PLAN PROVISIONS

ESTABLISHMENT OF THE FUND

The Police Pension Fund is established and administered as prescribed by "Article 3 – Police Pension Fund – Municipalities 500,000 and Under" of the Illinois Pension Code.

ADMINISTRATION

The Police Pension Fund is administered by a Board of Trustees whose duties are to manage the Pension Fund, determine applications for pensions, authorize payment of pensions, establish rules, pay expenses, invest assets, and keep records.

MEMBER CONTRIBUTIONS

Members contribute 9.910% of pensionable salary.

REGULAR RETIREMENT PENSION BENEFIT

Tier I

Eligibility: Age 50 with at least 20 years of creditable service.

Benefit: 50% of final salary for the first 20 years of service, plus an additional 2.5% of final salary for each year of service beyond 20 years of service, and not to exceed 75% of final salary. "Final salary" is based on the police officer's pensionable salary attached to rank held on the last day of service, unless the pensionable salary was greater at some point within the year prior to the last day of service. If so, the pensionable salary is averaged over the last 12 months.

Annual Increase in Benefit: A police officer is entitled to receive an initial increase equal to 1/12 of 3% of the original monthly benefit for each full month that has passed since the pension began. The initial increase date will be the latter of the first day of the month after the pensioner turns age 55 or the first day of the month after the benefit date anniversary. Subsequent increases of 3% of the current monthly benefit will be granted every January 1st thereafter.

SUMMARY OF PRINCIPAL PLAN PROVISIONS

Regular Retirement Pension Benefit - Continued

Tier II

Eligibility: Age 55 with at least 10 years of creditable service.

Benefit: 2.5% of final average salary for each year of service, and not to exceed 75% of final average salary. "Final average salary" is determined by dividing the total pensionable salary during 48 consecutive months of service within the last 60 months of service in which total pensionable salary was the highest, by the number of months of service in that period (or by dividing the total pensionable salary during 96 consecutive months of service within the last 120 months of service in which total pensionable salary was the highest, by the number of months of service in that period, if greater). Annual salary for this purpose will not exceed the salary cap, indexed by the lesser of 3% or the CPI-U for the 12 months ending with the September preceding each November 1st. The salary cap will not decrease.

Annual Increase in Benefit: The initial increase date will be the latter of the January 1st after the pensioner turns age 60 or the January 1st after the benefit date anniversary. Subsequent increases will be granted every January 1st thereafter. The initial increase and subsequent increases will be the lesser of 3% of the original benefit or ½ of the CPI-U for the 12 months ending with the September preceding each November 1st.

Early Retirement Pension Benefit

Tier I

None.

Tier II

Eligibility: Age 50 with at least 10 years of creditable service.

Benefit: The regular retirement pension benefit reduced by ½ of 1% for each month that the police officer's age is between 50 and 55.

Annual Increase in Benefit: The initial increase date will be the latter of the January 1st after the pensioner turns age 60 or the January 1st after the benefit date anniversary. Subsequent increases will be granted every January 1st thereafter. The initial increase and subsequent increases will be the lesser of 3% of the original benefit or ½ of the CPI-U for the 12 months ending with the September preceding each November 1st.

SURVIVING SPOUSE BENEFIT

Tier I

Eligibility: Married to an active police officer with at least 8 years of creditable service, a disabled pensioner at the time of death, or a retired pensioner on the last day of service.

Active Line of Duty Death Benefit: An eligible surviving spouse is entitled to receive 100% of the police officer's final pensionable salary attached to rank held on the last day of service.

Non-Duty Death Benefit:

Disabled or Retired Pensioner: An eligible surviving spouse is entitled to receive the pensioner's benefit at the time of death.

Active Member with 20+ Years of Service: An eligible surviving spouse is entitled to the police officer's eligible benefit at the time of death.

Active Member with 10-20 Years of Service: An eligible surviving spouse is entitled to receive 50% of the police officer's pensionable salary attached to rank held on the last day of service, unless the pensionable salary was greater at some point within the year prior to the last day of service. If so, the pensionable salary is averaged over the last 12 months.

Annual Increase in Benefit: None.

Tier II

Eligibility: Married to an active police officer with at least 8 years of creditable service, a disabled pensioner at the time of death, or a retired pensioner on the last day of service.

Active Line of Duty Death Benefit: An eligible surviving spouse is entitled to receive 100% of the police officer's final pensionable salary attached to rank held on the last day of service.

Non-Duty Death Benefit:

Disabled or Retired Pensioner, Active Member with 20+ Years of Service, and Active Member with 10-20 Years of service: An eligible surviving spouse is entitled to receive the greater of 66⅔% of the police officer's earned pension benefit at the time of death or 54% of the police officer's monthly salary at the time of death.

Annual Increase in Benefit: The initial increase date will be the January 1st after the surviving spouse turns age 60. Subsequent increases will be granted every January 1st thereafter. The initial increase and subsequent increases will be the lesser of 3% of the original benefit or ½ of the CPI-U for the 12 months ending with the September preceding each November 1st.

SUMMARY OF PRINCIPAL PLAN PROVISIONS

TERMINATION BENEFIT – VESTED

Tier I

Eligibility: Age 60 with at least 8 but less than 20 years of creditable service.

Benefit: 2.5% of final salary for each year of service. "Final salary" is based on the police officer's pensionable salary attached to rank held on the last day of service, unless the pensionable salary was greater at some point within the year prior to the last day of service. If so, the pensionable salary is averaged over the last 12 months.

Annual Increase in Benefit: A police officer is entitled to receive an initial increase equal to 1/12 of 3% of the original monthly benefit for each full month that has passed since the pension began. The initial increase date will be the first day of the month after the benefit date anniversary. Subsequent increases of 3% of the current monthly benefit will be granted every January 1st thereafter.

Tier II

None.

SUMMARY OF PRINCIPAL PLAN PROVISIONS

DISABILITY BENEFIT

Tier I

Eligibility: Duty or Non-Duty Disability or Occupational Disease Disability with at least 5 years of creditable service.

Benefit: For a duty disability or an occupational disease disability with at least 5 years of creditable service, a police officer is entitled to receive the greater of 65% of final salary or the regular retirement pension benefit at the time of disability. For a non-duty disability, a police officer is entitled to receive 50% of final salary. "Final salary" is based on the police officer's pensionable salary attached to rank held on the last day of service.

Annual Increase in Benefit: A police officer is entitled to receive an initial increase equal to 3% of the original monthly benefit for each full year that has passed since the pension began. The initial increase date will be the latter of the January 1st after following pensioner turns age 60 or the January 1st after the benefit date anniversary. Subsequent increases of 3% of the original monthly benefit will be granted every January 1st thereafter.

Tier II

Eligibility: Duty or Non-Duty Disability or Occupational Disease Disability with at least 5 years of creditable service.

Benefit: For a duty disability or an occupational disease disability with at least 5 years of creditable service, a police officer is entitled to receive the greater of 65% of final salary or the regular retirement pension benefit at the time of disability. For a non-duty disability, a police officer is entitled to receive 50% of final salary. "Final salary" is based on the police officer's pensionable salary attached to rank held on the last day of service.

Annual Increase in Benefit: A police officer is entitled to receive an initial increase equal to 3% of the original monthly benefit for each full year that has passed since the pension began. The initial increase date will be the latter of the January 1st after following pensioner turns age 60 or the January 1st after the benefit date anniversary. Subsequent increases of 3% of the original monthly benefit will be granted every January 1st thereafter.

GLOSSARY OF TERMS

Glossary of Terms

GLOSSARY OF TERMS

Actuarial Accrued Liability – The Actuarial Present Value of future benefits based on Members' service rendered to the Measurement Date using the selected Actuarial Cost Method. It is that portion of the Actuarial Present Value of Plan benefits and expenses allocated to prior years of employment. It is not provided for by future Normal Costs.

Actuarial Cost Method – The method used to allocate the projected obligations of the Plan over the working lifetimes of the Plan Members.

Actuarial Value of Assets – The value of the assets used in the determination of the Unfunded Actuarial Accrued Liability. The Actuarial Value of Assets is related to Fair Value of Assets, with adjustments made to spread unanticipated gains and losses for a given year over a period of several years. Actuarial Value of Assets is generally equally likely to fall above or below the Fair Value of Assets, and generally does not experience as much volatility over time as the Fair Value of Assets.

Asset Valuation Method **–** A valuation method designed to smooth random fluctuations in asset values. The objective underlying the use of an Asset Valuation Method is to provide for the long-term stability of Employer Contributions.

Funding Policy – A set of procedures for a Pension Fund that outlines the "best practices" for funding the pension benefits based on the goals of the Plan Sponsor. A Funding Policy discusses items such as assumptions, Actuarial Cost Method, assets, and other parameters that will best help the Plan Sponsor meet their goal of working in the best interest of the Plan Members.

Fair Value of Assets – The value of the cash, bonds, securities, and other assets held in the pension trust as of the Measurement Date.

Normal Cost – The present value of future benefits earned by Members during the current Fiscal Year. It is that portion of the Actuarial Present Value of benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

Unfunded Actuarial Accrued Liability **–** The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The Unfunded Actuarial Accrued Liability is amortized over a period either in level dollar amounts or as a level percentage of projected payroll.

Lauterbach & Amen, LLP

CERTIFIED PUBLIC ACCOUNTANTS

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Marquette Associates

Downers Grove Police Pension Fund

August 31, 20222022

Marquette Associates

August 2022
Market Environment

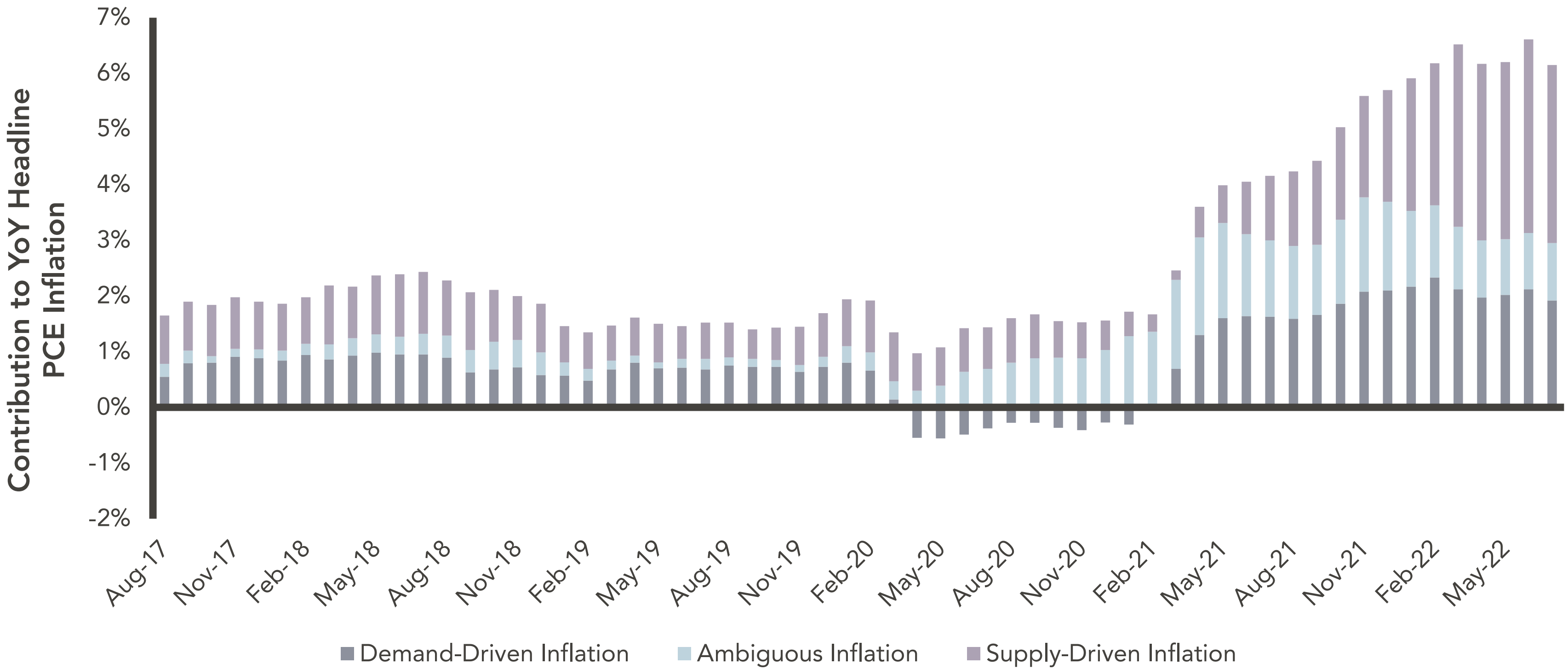
Macro themes

- The bear market rally that began in June fizzled in August. At its interim peak, the S&P 500 had rallied 17% off mid-June lows. The correction in the later half of August put the index down 16% YTD.
- Overly-bullish beliefs about the Fed pivoting toward more accommodative monetary policy were confronted by hawkish comments from Chairman Powell during his much-anticipated Jackson Hole speech. The Fed remains committed to fighting decades-high inflation.
- August CPI, released in September, ticked down slightly to 8.3% year-over-year, with help from lower gasoline prices, but reaccelerated month-over-month versus expectations for a decline in prices from July. Core inflation reaccelerated year-over-year, with large contributions from shelter and medical care.
- Expectations have firmed for another 75bps rate hike from the Fed at its September meeting. The 10-year Treasury yield rose back above 3% in August.
- 2Q earnings added little bottoms-up clarity to top-down uncertainties. The majority of companies in the S&P 500 beat 2Q expectations and 3Q estimates were lowered only modestly, leaving the door open to further downward revisions.

Sources: Bloomberg, FactSet

Inflation driven by supply and demand

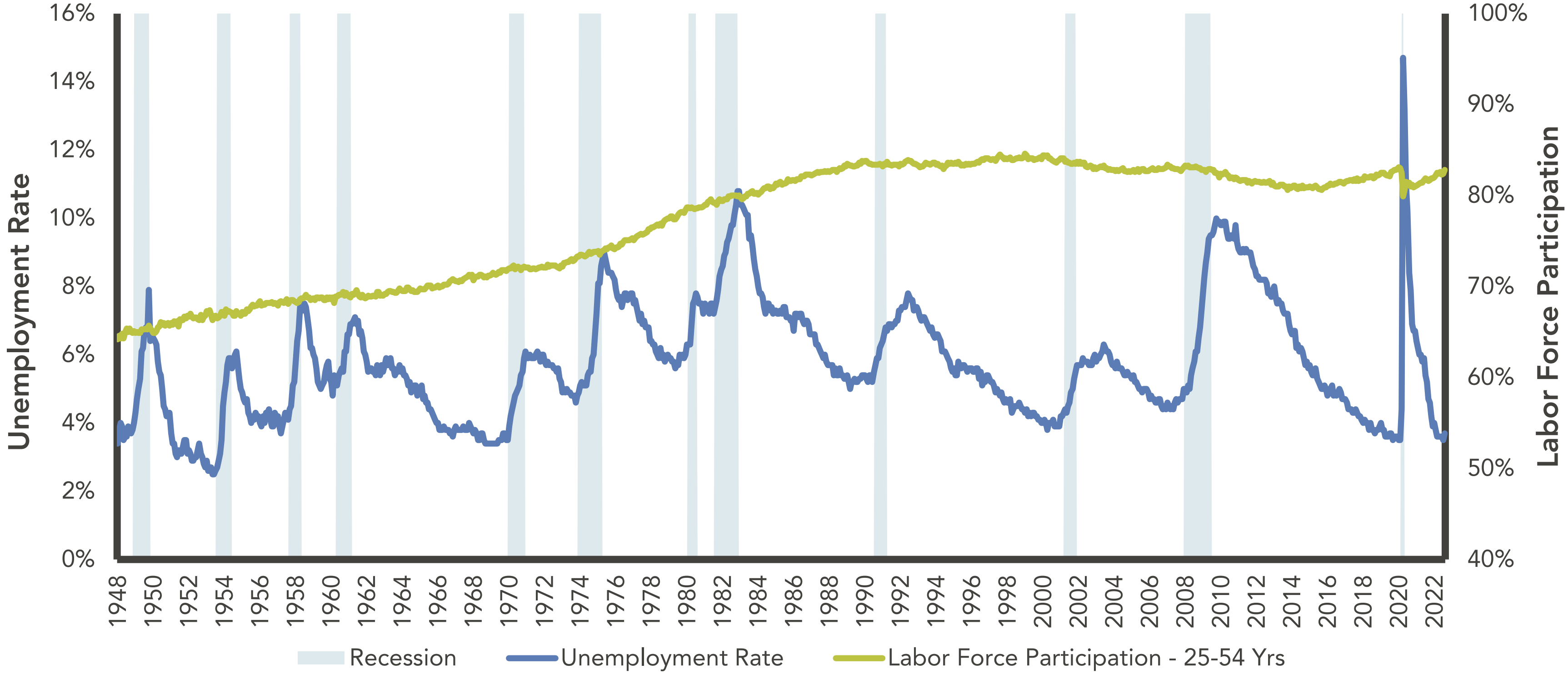
The Fed's tools primarily impact demand, and having to lower demand enough to offset both supply and demand factors increases the risk of triggering a recession



Source: Federal Reserve Bank of San Francisco as of August 31, 2022

Continued labor market strength

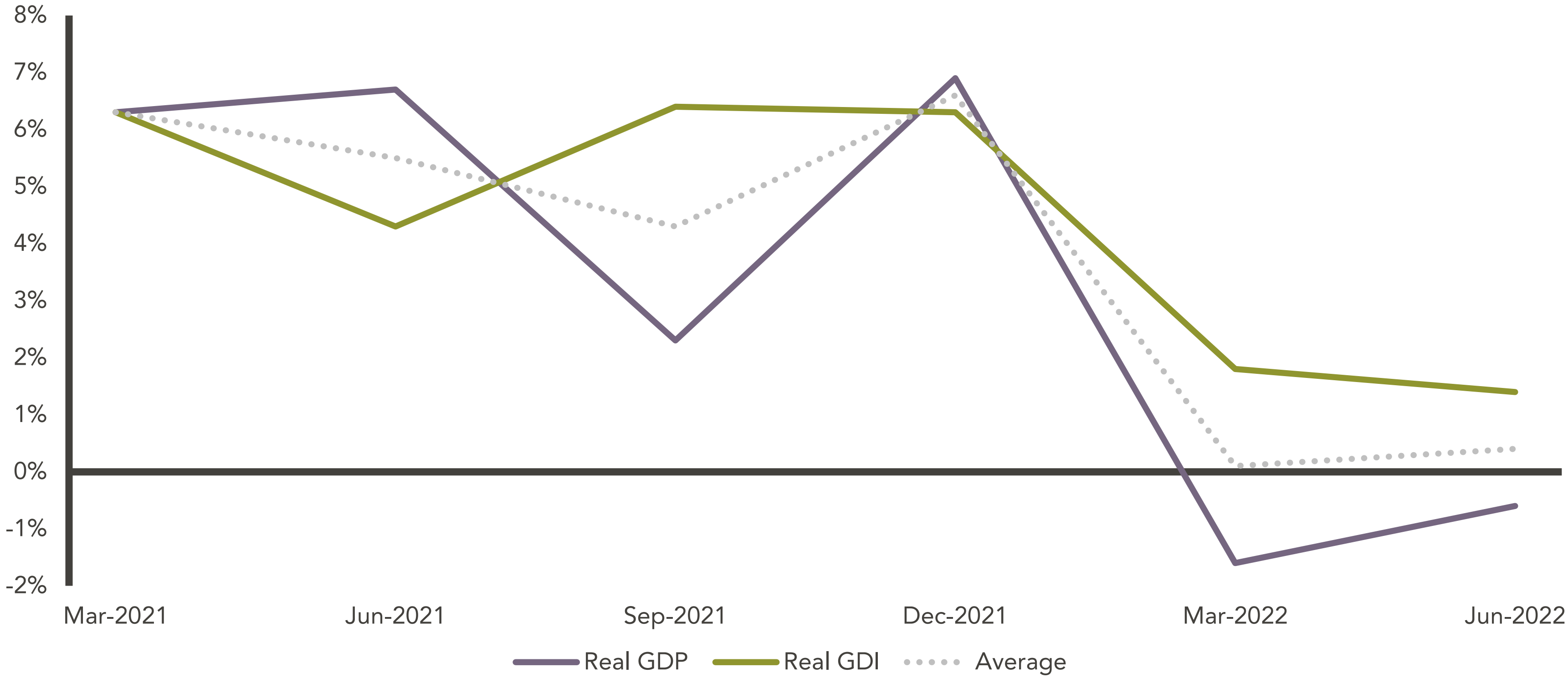
A near record-low unemployment rate and a prime-age labor force participation rate that reflects full employment gives the Fed leeway to continue raising rates



Sources: Bureau of Labor Statistics, Federal Reserve Bank of St. Louis as of August 31, 2022

GDP vs GDI

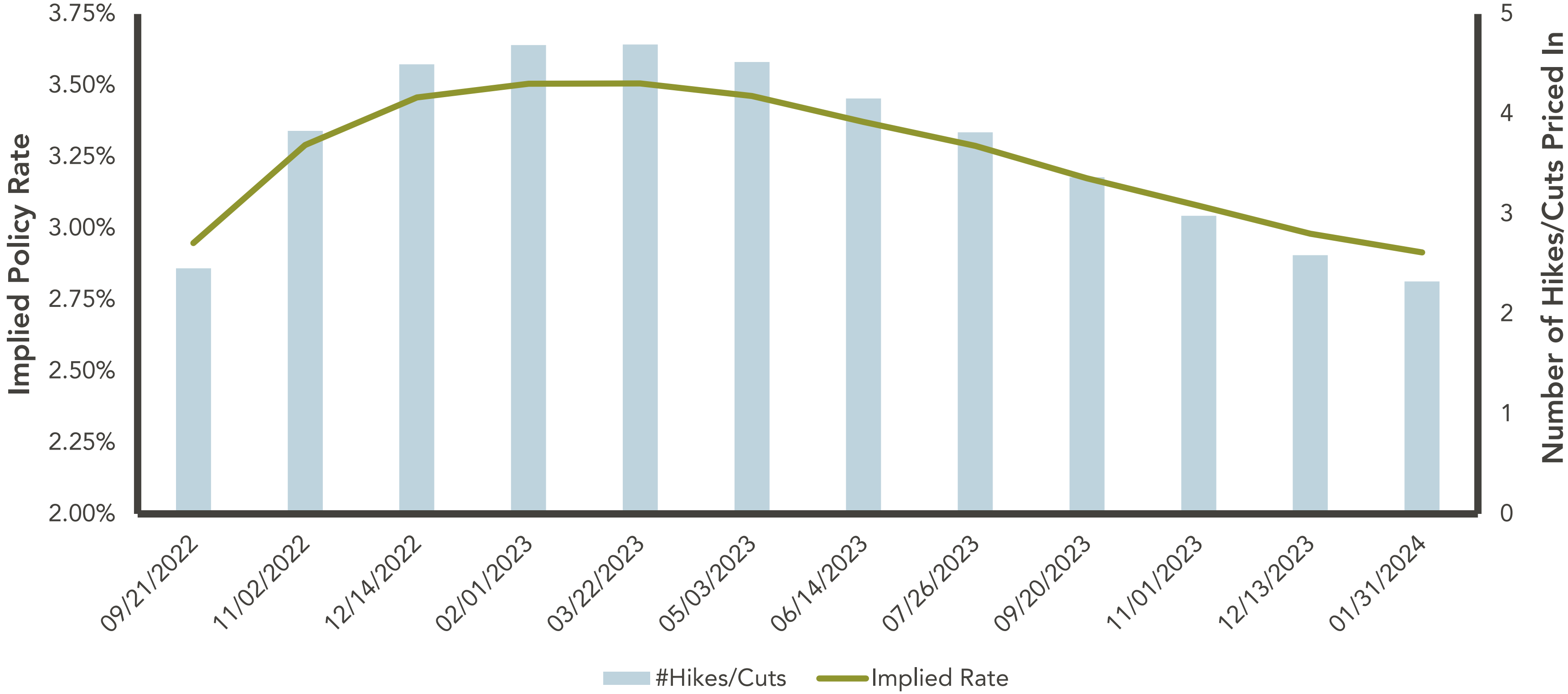
While GDP was negative in the first half of the year, Gross Domestic Income – another measure of economic activity – has remained positive; conflicting data makes it harder to assess the impact of rising rates



Sources: Bureau of Economic Analysis, Federal Reserve Bank of St. Louis as of August 31, 2022

Higher rates expected

The market, via fed funds futures, is pricing in additional rate hikes following worse-than-expected August CPI

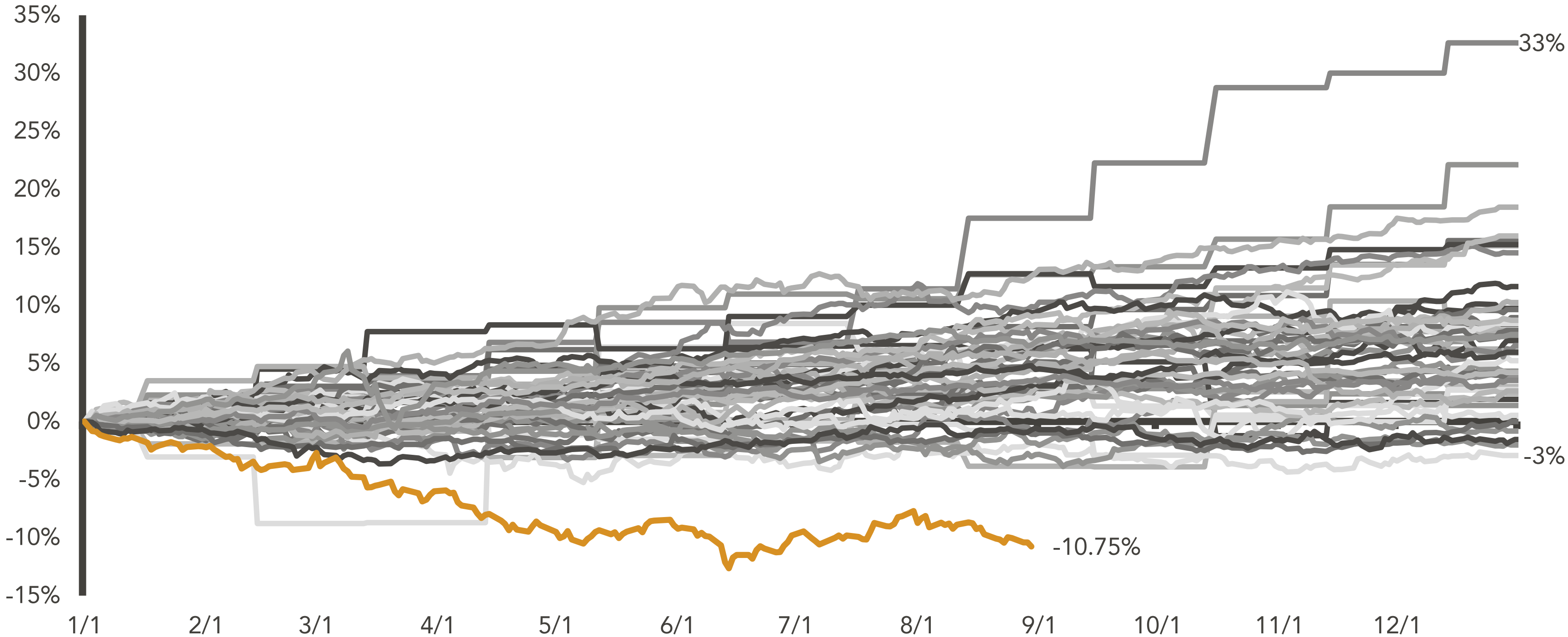


Source: Bloomberg as of September 13, 2022

The fixed income two-step

Higher rates and wider credit spreads in August erased most of the earlier summer rebound

Bloomberg US Aggregate Index Yearly Performance

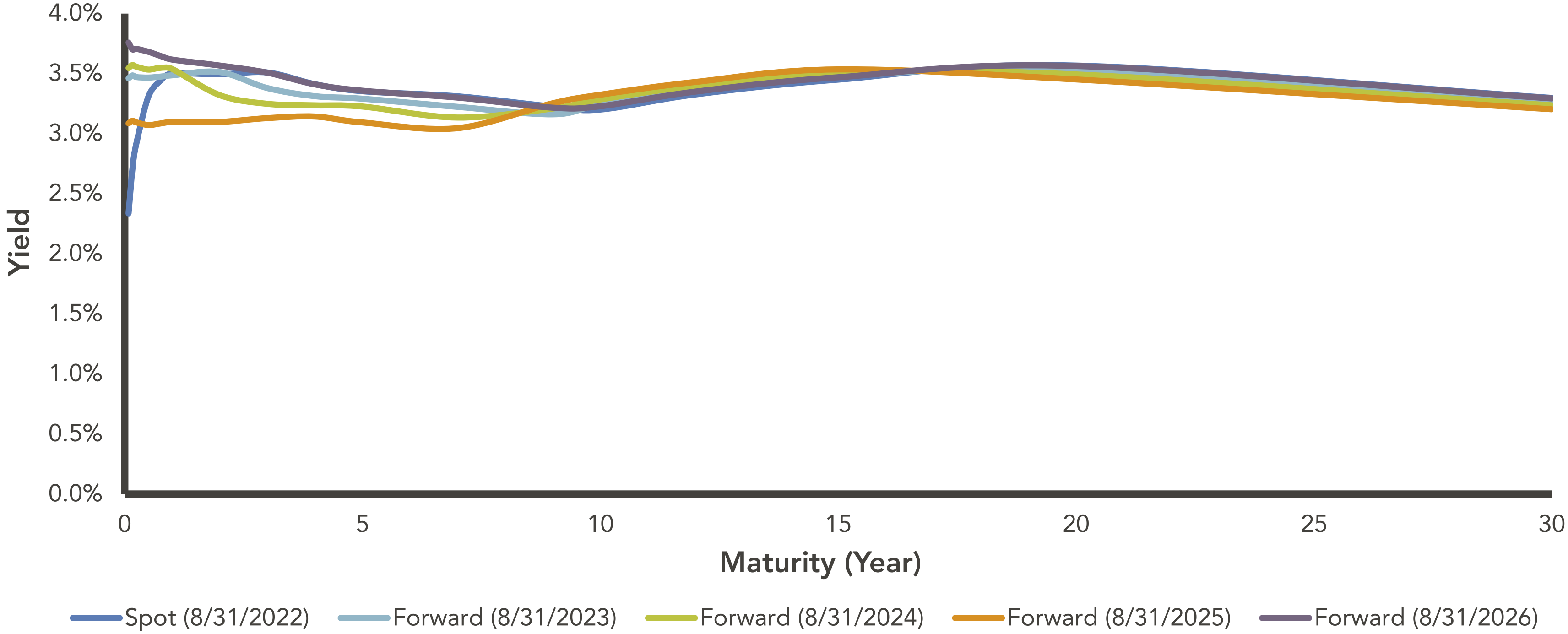


Source: Bloomberg as of August 31, 2022

Rate expectations are high and going higher

The 10-year moved aggressively higher from 2.67% in July to 3.15% in August, with the market projecting 3.23% in four years

Projected Treasury Forward Curves, Next Four Years



Sources: Bloomberg, U.S. Treasury as of August 31, 2022

U.S. stocks falter in August after a strong July

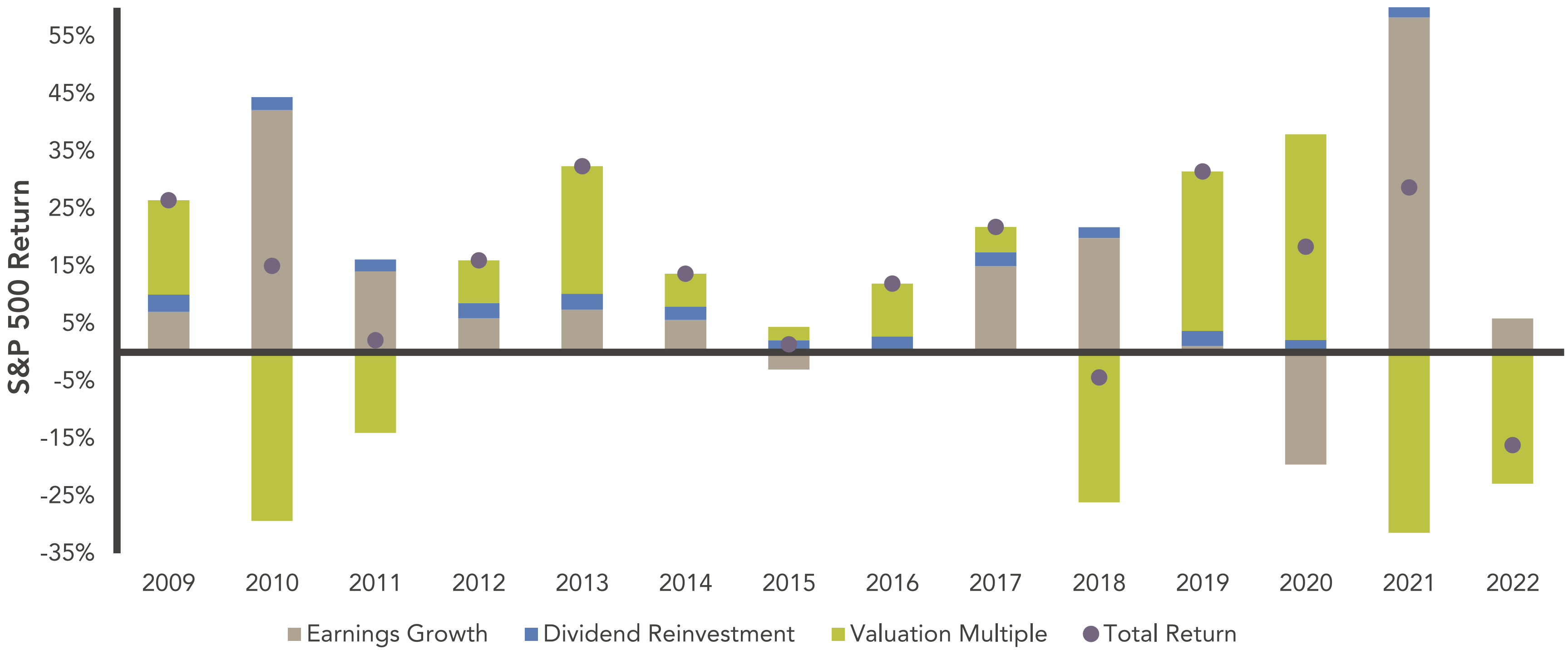
Each major U.S. equity market index posted negative returns in August after a significant July bounce; growth indices held up better than value-oriented peers in the small-cap space while the reverse was true further up the market cap spectrum

		MTD (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yr (%)	5 Yr (%)	10 Yr (%)
Broad Market Indices	Dow Jones	-3.7	2.8	-12.0	-9.1	8.3	9.9	11.8
	Wilshire 5000	-3.8	5.4	-16.6	-12.7	12.3	11.5	12.9
	Russell 3000	-3.7	5.3	-16.9	-13.3	11.9	11.3	12.8
Large-Cap Market Indices	S&P 500	-4.1	4.8	-16.1	-11.2	12.4	11.8	13.1
	Russell 1000	-3.8	5.1	-16.9	-13.0	12.1	11.6	13.0
	Russell 1000 Value	-3.0	3.5	-9.8	-6.2	8.9	7.9	10.5
	Russell 1000 Growth	-4.7	6.8	-23.2	-19.1	14.5	14.8	15.1
Mid-Cap Market Indices	Russell Mid-Cap	-3.1	6.4	-16.5	-14.8	9.4	9.2	11.6
	Russell Mid-Cap Value	-3.1	5.3	-11.8	-7.8	9.6	7.5	10.8
	Russell Mid-Cap Growth	-3.3	8.6	-25.1	-26.7	7.0	10.2	12.1
Small-Cap Market Indices	Russell 2000	-2.0	8.2	-17.2	-17.9	8.6	6.9	10.0
	Russell 2000 Value	-3.2	6.2	-12.2	-10.2	10.4	6.6	9.5
	Russell 2000 Growth	-0.9	10.2	-22.3	-25.3	5.9	6.7	10.2

Source: Morningstar Direct as of August 31, 2022

Multiple contraction responsible for S&P 500 losses

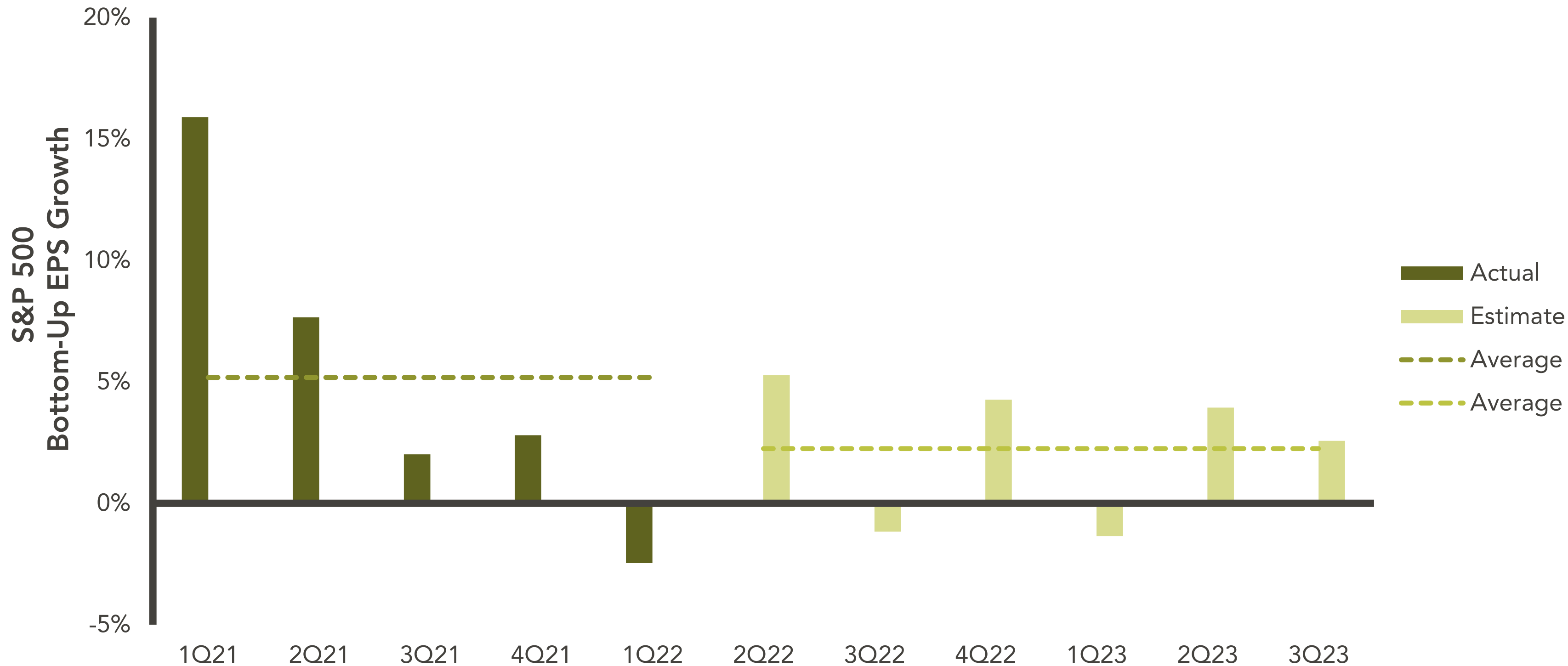
While earnings growth for U.S. equities has remained positive since the beginning of the year, a re-rating of the index multiple has driven negative YTD returns



Source: Bloomberg as of August 31, 2022

Earnings growth mixed from here

After generally strong second quarter earnings, U.S. equities could see earnings growth fall into negative territory in the coming quarters



Source: FactSet as of August 31, 2022

Developed markets produce losses in August

Emerging and frontier markets outperformed developed markets, posting positive performance for the month

		MTD (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yr (%)	5 Yr (%)	10 Yr (%)
Global Equity Market Indices	MSCI ACWI	-3.7	3.0	-17.8	-15.9	8.0	7.0	8.7
	MSCI ACWI ex. US	-3.2	0.1	-18.3	-19.5	2.9	1.7	4.5
Developed Markets Indices	MSCI EAFE	-4.7	0.0	-19.6	-19.8	2.4	1.6	5.0
	MSCI EAFE Local	-2.3	2.8	-8.8	-6.5	5.9	4.7	8.3
Emerging Markets Indices	MSCI Emerging Markets	0.4	0.2	-17.5	-21.8	2.7	0.6	2.9
	MSCI EM Local	1.2	1.3	-12.5	-15.8	4.9	3.2	5.9
Small-Cap Market Indices	MSCI EAFE Small-Cap	-4.4	1.9	-23.3	-26.0	2.8	1.2	7.1
	MSCI EM Small-Cap	2.5	5.3	-15.8	-16.4	10.0	3.4	4.6
Frontier Markets Index	MSCI Frontier	1.8	3.1	-18.1	-16.6	1.3	1.1	5.1

Source: Bloomberg as of August 31, 2022

Rate hikes lead to increased volatility in developed markets

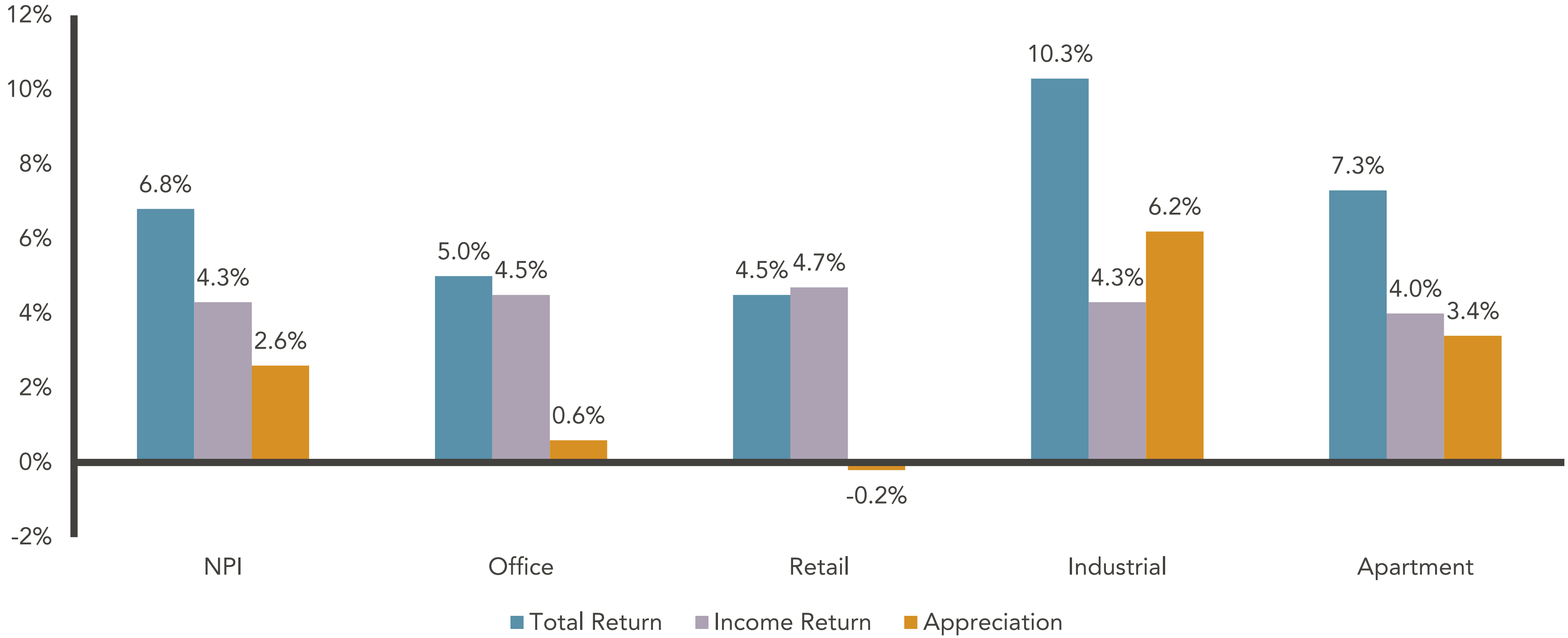
The impact of the Fed and the ECB raising rates has been felt the most in developed markets; emerging market countries started the rate hiking process much earlier

Source: eVestment as of August 31, 2022

Property yield expectations rising

Net operating income growth, more so than cap rate compression, is expected to drive returns across most core property sectors through 2025

Expected annual returns by property type 2021–2025



Sources: PREA Consensus Survey 2022 Q1, AEW

MarquetteAssociates

Downers Grove Police Pension Fund

Downers Grove Police

Pension Fund

Executive Summary

August 31, 2022

Market Value: $64.4 Million and 100.0% of Fund

Action Items

- Discuss $0.6 million in cash remaining at US Bank
- Discuss custodial accounts and investment professional agreements

Total Fund Composite

Market Values

Market Value: $64.4 Million and 100.0% of Fund

Ending August 31, 2022

	Asset Class	Market Value	3 Mo Net Cash Flows	% of Portfolio	Policy %	Policy Difference
Total Fund Composite		**64,395,604**	**959,569**	**100.0**	**100.0**	**0**
Fixed Income Composite		**21,292,280**	**-9,807**	**33.1**	**38.0**	**-3,178,050**
Boyd Watterson	Int. Fixed Income	21,292,280	-9,807	33.1	38.0	-3,178,050
U.S. Equity Composite		**20,519,735**	**-69,865**	**31.9**	**35.0**	**-2,018,727**
Vanguard Institutional Index Fund	Large-Cap Core	11,611,201	-45,778	18.0	20.0	-1,267,920
Vanguard Mid-Cap Index Fund	Mid-Cap Core	4,441,268	0	6.9	7.5	-388,402
Ziegler Capital	Small-Cap Core	4,467,266	-24,087	6.9	7.5	-362,404
Non-U.S. Equity Composite		**6,051,429**	**0**	**9.4**	**14.0**	**-2,963,956**
Vanguard Total Intl. Stock Fund	Non-U.S. All-Cap Core	6,051,429	0	9.4	14.0	-2,963,956
Real Estate Composite		**8,220,262**	**0**	**12.8**	**10.0**	**1,780,702**
Principal Global Investors	Core Real Estate	8,220,262	0	12.8	10.0	1,780,702
Alternatives Composite		**3,125,670**	**0**	**4.9**	**3.0**	**1,193,802**
PIMCO Commodity Real Return Strategy	Long Commodities	3,125,670	0	4.9	3.0	1,193,802
Cash Equivalent Composite		**5,186,228**	**1,039,241**	**8.1**	**0.0**	**5,186,228**
First American Govt Oblig Fund	Cash & Equivalents	385,945	44,233	0.6	0.0	385,945
Fifth Third Bank	Checking	4,800,283	995,008	7.5	0.0	4,800,283

Total Fund Composite

Annualized Performance (Net of Fees)

Market Value: $64.4 Million and 100.0% of Fund

Ending August 31, 2022

	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
Total Fund Composite	**-2.9%**	**-8.6%**	**-6.1%**	**5.1%**	**6.4%**	**5.4%**	**5.7%**	**6.2%**	**6.3%**
Policy Benchmark	*-2.8%*	*-9.4%*	*-7.7%*	*4.2%*	*6.0%*	*5.2%*	*5.6%*	*6.2%*	*6.2%*
Actuarial Rate of Return	*1.7%*	*4.6%*	*7.0%*	*7.0%*	*7.0%*	*7.0%*	*7.0%*	*7.1%*	*7.1%*
Fixed Income Composite	**-1.2%**	**-7.0%**	**-8.0%**	**-4.0%**	**-0.6%**	**1.5%**	**1.1%**	**1.3%**	**1.2%**
Fixed Income Benchmark	*-1.5%*	*-7.1%*	*-8.2%*	*-4.1%*	*-0.9%*	*1.3%*	*0.8%*	*1.2%*	*1.1%*
U.S. Equity Composite	**-3.3%**	**-16.6%**	**-12.3%**	**9.4%**	**11.6%**	**8.1%**	**9.8%**	**10.7%**	**11.4%**
FT Wilshire 5000 Total Market	*-3.4%*	*-16.6%*	*-12.7%*	*7.9%*	*12.3%*	*9.5%*	*11.5%*	*12.3%*	*12.9%*
Non-U.S. Equity Composite	**-8.8%**	**-18.6%**	**-19.7%**	**0.7%**	**3.3%**	**1.4%**	**1.8%**	**4.4%**	**4.8%**
MSCI ACWI ex USA	*-8.5%*	*-18.3%*	*-19.5%*	*0.2%*	*2.9%*	*1.3%*	*1.7%*	*4.1%*	*4.5%*
Real Estate Composite	**0.4%**	**10.6%**	**24.8%**	**17.0%**	**11.3%**	**10.0%**	**9.7%**	**9.6%**	**--**
NFI-ODCE	*1.5%*	*12.0%*	*23.2%*	*17.2%*	*11.4%*	*9.8%*	*9.3%*	*9.0%*	*10.0%*
Alternatives Composite	**-9.3%**	**19.5%**	**24.6%**	**31.6%**	**19.9%**	**12.8%**	**10.4%**	**6.6%**	**--**
Bloomberg Commodity Index TR USD	*-6.9%*	*23.6%*	*27.7%*	*29.4%*	*17.2%*	*10.9%*	*8.7%*	*5.2%*	*-1.1%*

- *Policy Benchmark = 38% Bloomberg US Govt/Credit Int TR / 7.5% CRSP US Mid Cap TR USD / 7.5% Russell 2000 / 14% MSCI ACWI ex USA / 3% Bloomberg Commodity Index TR USD / 20% S&P 500 / 10% NFI-ODCE*
- *Fixed Income Benchmark = 100% Bloomberg US Govt/Credit Int TR*

Investment Manager

Annualized Performance (Net of Fees)

Market Value: $64.4 Million and 100.0% of Fund

Ending August 31, 2022

	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
Total Fund Composite	**-2.9%**	**-8.6%**	**-6.1%**	**5.1%**	**6.4%**	**5.4%**	**5.7%**	**6.2%**	**6.3%**
Policy Benchmark	*-2.8%*	*-9.4%*	*-7.7%*	*4.2%*	*6.0%*	*5.2%*	*5.6%*	*6.2%*	*6.2%*
Actuarial Rate of Return	*1.7%*	*4.6%*	*7.0%*	*7.0%*	*7.0%*	*7.0%*	*7.0%*	*7.1%*	*7.1%*
Fixed Income Composite	**-1.2%**	**-7.0%**	**-8.0%**	**-4.0%**	**-0.6%**	**1.5%**	**1.1%**	**1.3%**	**1.2%**
Fixed Income Benchmark	*-1.5%*	*-7.1%*	*-8.2%*	*-4.1%*	*-0.9%*	*1.3%*	*0.8%*	*1.2%*	*1.1%*
Boyd Watterson	-1.2%	-7.0%	-7.9%	-4.0%	-0.6%	1.5%	1.1%	1.3%	1.2%
Fixed Income Benchmark	*-1.5%*	*-7.1%*	*-8.2%*	*-4.1%*	*-0.9%*	*1.3%*	*0.8%*	*1.2%*	*1.1%*
U.S. Equity Composite	**-3.3%**	**-16.6%**	**-12.3%**	**9.4%**	**11.6%**	**8.1%**	**9.8%**	**10.7%**	**11.4%**
FT Wilshire 5000 Total Market	*-3.4%*	*-16.6%*	*-12.7%*	*7.9%*	*12.3%*	*9.5%*	*11.5%*	*12.3%*	*12.9%*
Vanguard Institutional Index Fund	-3.9%	-16.2%	-11.3%	7.9%	12.4%	9.9%	11.8%	12.5%	13.0%
S&P 500	*-3.9%*	*-16.1%*	*-11.2%*	*7.9%*	*12.4%*	*9.9%*	*11.8%*	*12.5%*	*13.1%*
Vanguard Mid-Cap Index Fund	-3.6%	-17.3%	-14.4%	9.3%	9.9%	7.7%	--	--	--
CRSP US Mid Cap TR USD	*-3.6%*	*-17.3%*	*-14.4%*	*9.3%*	*9.9%*	*7.7%*	*9.4%*	*9.7%*	*11.9%*
Ziegler Capital	-1.2%	-16.9%	-13.4%	12.9%	10.6%	3.1%	--	--	--
Russell 2000	*-0.7%*	*-17.2%*	*-17.9%*	*9.9%*	*8.6%*	*2.8%*	*6.9%*	*8.3%*	*10.0%*
Non-U.S. Equity Composite	**-8.8%**	**-18.6%**	**-19.7%**	**0.7%**	**3.3%**	**1.4%**	**1.8%**	**4.4%**	**4.8%**
MSCI ACWI ex USA	*-8.5%*	*-18.3%*	*-19.5%*	*0.2%*	*2.9%*	*1.3%*	*1.7%*	*4.1%*	*4.5%*
Vanguard Total Intl. Stock Fund	-8.8%	-18.6%	-19.7%	0.7%	3.3%	1.4%	1.8%	4.4%	4.8%
FTSE Global All Cap ex US	*-8.3%*	*-18.0%*	*-19.1%*	*1.3%*	*3.8%*	*1.9%*	*2.3%*	*4.8%*	*5.2%*
MSCI ACWI ex USA	*-8.5%*	*-18.3%*	*-19.5%*	*0.2%*	*2.9%*	*1.3%*	*1.7%*	*4.1%*	*4.5%*
Real Estate Composite	**0.4%**	**10.6%**	**24.8%**	**17.0%**	**11.3%**	**10.0%**	**9.7%**	**9.6%**	**--**
NFI-ODCE	*1.5%*	*12.0%*	*23.2%*	*17.2%*	*11.4%*	*9.8%*	*9.3%*	*9.0%*	*10.0%*
Principal Global Investors	0.4%	10.6%	24.8%	17.0%	11.3%	10.0%	9.7%	9.6%	--
NFI-ODCE	*1.5%*	*12.0%*	*23.2%*	*17.2%*	*11.4%*	*9.8%*	*9.3%*	*9.0%*	*10.0%*
Alternatives Composite	**-9.3%**	**19.5%**	**24.6%**	**31.6%**	**19.9%**	**12.8%**	**10.4%**	**6.6%**	**--**
Bloomberg Commodity Index TR USD	*-6.9%*	*23.6%*	*27.7%*	*29.4%*	*17.2%*	*10.9%*	*8.7%*	*5.2%*	*-1.1%*
PIMCO Commodity Real Return Strategy	-9.3%	19.5%	24.6%	31.6%	19.9%	12.8%	10.4%	6.6%	--
Bloomberg Commodity Index TR USD	*-6.9%*	*23.6%*	*27.7%*	*29.4%*	*17.2%*	*10.9%*	*8.7%*	*5.2%*	*-1.1%*

DISCLOSURE