RESOLUTION NO. 19-68

A RESOLUTION ACCEPTING THE GASB 67&68 ACTUARIAL VALUATION FOR FISCAL YEAR ENDED APRIL 30, 2019 AND THE TAX LEVY ACTUARIAL VALUATION FOR FISCAL YEAR ENDING APRIL 30, 2020 FOR VILLAGE OF ANTIOCH POLICE PENSION FUND.

WHEREAS, the Village of Antioch, Lake County, Illinois (the "Village") is a duly organized and existing municipality created under the provisions of the laws of the State of Illinois; and

WHEREAS, the GASB 67 & 68 Actuarial Valuation and the Tax Levy Actuarial Valuation were prepared by Lauterbach and Amen, LLP for the Antioch Police Pension Fund; and

WHEREAS, the corporate authorities have considered the presentation and recommendation of acceptance of the GASB 67 and GASB 68 and the Tax Levy Actuarial Valuations;

NOW, THEREFORE, BE IT RESOLVED, by the Mayor and Board of Trustees of the Village of Antioch to accept as presented the GASB 67&68 Actuarial Valuation for fiscal year ended April 30, 2019 and the Tax Levy Actuarial Valuation for fiscal year ending April 30, 2020 for the Village of Antioch Police Pension Fund, as prepared by Lauterbach and Amen, LLP.

ADOPTED by the Mayor and Village Board of Trustees of the Village of Antioch, Lake County, Illinois, this 18th day of November, 2019.

AYES: 6: Pierce, Macek, Yost, Dominiak, Poulos and Johnson.

NAYS: 0.

ABSENT: 0.

Lawrence M. Hanson, Mayor

ATTEST:

Lori K. Romine, Village Clerk

Actuarial Funding Report

ANTIOCH POLICE PENSION FUND

Actuarial Valuation
as of May 1, 2019

For the Contribution Year May 1, 2019 to April 30, 2020

LAUTERBACH & AMEN, LLP

Actuarial Valuation – Funding Recommendation

Lauterbach & Amen, LLP

CERTIFIED PUBLIC ACCOUNTANTS

ANTIOCH POLICE PENSION FUND

Contribution Year Ending: April 30, 2020
Actuarial Valuation Date: May 1, 2019
Utilizing Data as of April 30, 2019

Submitted by:

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

Contact:

Todd A. Schroeder
Director
October 29, 2019

LAUTERBACH & AMEN, LLP

TABLE OF CONTENTS

ACTUARIAL CERTIFICATION 1

MANAGEMENT SUMMARY 3

- Recommended Contribution 4
- Funded Status 4
- Management Summary – Comments and Analysis 5
- Actuarial Recommended Contribution – Reconciliation 11

VALUATION OF FUND ASSETS 12

- Market Value of Assets 13
- Market Value of Assets (Gain)/Loss 14
- Development of the Actuarial Value of Assets 15
- Actuarial Value of Assets (Gain)/Loss 15
- Historical Asset Performance 16

RECOMMENDED CONTRIBUTION DETAIL 18

- Actuarial Accrued Liability 19
- Funded Status 19
- Development of the Employer Normal Cost 20
- Normal Cost as a Percentage of Expected Payroll 20
- Recommended Contribution 20
- Schedule of Amortization – Unfunded Actuarial Accrued Liability 21
- Actuarial Methods – Recommended Contribution 22

ILLINOIS STATUTORY MINIMUM CONTRIBUTION 23

- Statutory Minimum Contribution 24
- Funded Status – Statutory Minimum 24
- Actuarial Methods – Illinois Statutory Minimum Contribution 26

ACTUARIAL VALUATION DATA 27

- Active Employees 28
- Inactive Employees 28
- Summary Of Benefit Payments 28

ACTUARIAL FUNDING POLICIES 29

- Actuarial Cost Method 30
- Financing Unfunded Actuarial Accrued Liability 30
- Actuarial Value of Assets 32

ACTUARIAL ASSUMPTIONS 33

- Nature of Actuarial Calculations 34
- Actuarial Assumptions in the Valuation Process 34
- Assessment of Risk Exposures 35
- Limitations of Risk Analysis 35
- Actuarial Assumptions Utilized 36

TABLE OF CONTENTS

SUMMARY OF PRINCIPAL PLAN PROVISIONS 38
Establishment of the Fund 39
Administration 39
Employee Contributions 39
Regular Retirement Pension Benefit 39
Regular Retirement Pension Benefit - Continued 40
Early Retirement Pension Benefit 40
Surviving Spouse Benefit 41
Termination Benefit – Vested 42
Disability Benefit 43
GLOSSARY OF TERMS 44
Glossary of Terms 45

Lauterbach & Amen, LLP
CERTIFIED PUBLIC ACCOUNTANTS
668 NORTH RIVER RD. • NAPERVILLE, ILLINOIS 60563
PHONE 630.393.1483 • FAX 630.393.2516
www.lauterbachamen.com

ACTUARIAL CERTIFICATION

This report documents the results of the Actuarial Valuation for the Antioch Police Pension Fund. The information was prepared for use by the Antioch Police Pension Fund and the Village of Antioch, Illinois for determining the Recommended Contributions, under the selected Funding Policy and Statutory Minimum guidelines, for the Contribution Year May 1, 2019 to April 30, 2020. 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 Antioch Police Pension Fund, and may include results from the prior Actuary. We did not prepare the Actuarial Valuations for the years prior to May 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 Antioch 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.

668 NORTH RIVER RD. • NAPERVILLE, ILLINOIS 60563
PHONE 630.393.1483 • FAX 630.393.2516
www.lauterbachamen.com

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 of Lauterbach & Amen, LLP is an Associate of the Society of Actuaries and an Enrolled Actuary, and meets the Qualification Standards of the American Academy of Actuaries to render this Actuarial Certification. There is no relationship between the Antioch Police Pension Fund and Lauterbach & Amen, LLP that impairs our objectivity.

Respectfully Submitted,

LAUTERBACH & AMEN, LLP

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

MANAGEMENT SUMMARY

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

RECOMMENDED CONTRIBUTION

	Prior Valuation	Current Valuation
Recommended Contribution	$1,829,190	$2,020,811
Expected Payroll	$2,339,894	$2,414,900
Recommended Contribution as a Percent of Expected Payroll	78.17%	83.68%

The Recommended Contribution has Increased by $191,621 from the Prior Valuation.

FUNDED STATUS

	Prior Valuation	Current Valuation
Normal Cost	$630,535	$683,031
Market Value of Assets	$9,220,244	$10,180,218
Actuarial Value of Assets	$9,708,690	$10,570,687
Actuarial Accrued Liability	$30,551,726	$32,825,144
Unfunded Actuarial Accrued Liability	$20,843,036	$22,254,457
Percent Funded		
Actuarial Value of Assets	31.78%	32.20%
Market Value of Assets	30.18%	31.01%

The Percent Funded has Increased by 0.42% 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.

The Illinois State Statutes for Pension Funds contain parameters that are used to determine the Statutory Minimum Contribution to a public Pension Fund. Those parameters and the resulting Statutory Minimum Contribution are found in the *Illinois Statutory Minimum Contribution* 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 employees 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 $960,000.

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. In the next 5 years, benefit payments are anticipated to increase 25-30%, or approximately $390,000. In the next 10 years, the expected increase in benefit payments is 65-70%, or approximately $910,000.

Furthermore, Plans' with a large number of retirees have an increased "Longevity Risk". Longevity Risk is the possibility that retirees may live longer than projected by the Plan's mortality assumption. As shown above, benefit payments are expected to increase over the next 5-year and 10-year horizons. The projected

increases assume that current retirees pass away according to the Plan's mortality assumption. To the extent that current retirees live longer than expected, the future 5-year and 10-year benefit projections may be larger than the amounts disclosed above. 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 $45,000 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 five-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 Market 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 $390,000 in losses on the Market Value of Assets. These are asset losses that will be recognized in upcoming periods, independent of the future performance of the Market 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.

For example, two different Pension Funds could have the same Percent Funded, but have completely different risk profiles. One Fund might mostly cover active employees with little to no benefits in pay status, whereas a second Fund might mostly cover retirees 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 also 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 Market Value of Assets is less than the Actuarial Accrued Liability for inactive participants. The Fund assets and anticipated earnings are not sufficient to cover the benefits payable to the current inactive participants. 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 participants. 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, a plan in good financial standing will have the ratio of annual benefits payments to the Market Value of Assets to be less than the Expected Return on Investments assumption (i.e. 6.75%). Theoretically, in this case it can be considered that investment returns will fully cover the annual benefit payments, and therefore, all Employer and Employee Contributions made to the Fund will be used to pay for future benefit accruals and pay down the existing Unfunded Liability. To the extent the ratio of the annual benefit payments to the Market Value of Assets increases to above the Expected Rate of Return 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 Antioch Police Pension Fund has a ratio of benefit payments to the Market Value of Assets of 13.57%. In this case, there is considerable concern about the long-term sustainability of the Plan. Significant changes to the Funding Policy should be considered in order for the Plan Sponsor have the ability to pay all future benefit obligations.

<u>Fund Assets</u>
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 unaudited. As of the date of this report, the audit of the Fund assets is not complete, not available, or has not been provided.

The Fund Assets Used in this Report are Unaudited.

The current Fund assets are based on the year-end financials as prepared by the Pension Fund accountant. The year-end financials represent a full accrual version of the fiduciary Fund as of the end of the Fiscal Year, prepared in preparation for the audit. The changes to the Fund cash balance as of the Fiscal Year End are non-cash items that can include accrued interest, due/unpaid expenses, prepaids and other adjustments.

The Actuarial Value of Assets under the Funding Policy is equal to the fair Market 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.

Demographic Data

Demographic factors can change from year to year within the Pension Fund. Changes in this category include hiring new employees, employees retiring or becoming disabled, retirees 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 employee changes do not meet our long-term expectation. For example, if no employees become disabled during the year, we would expect a liability gain. If more employees become disabled than anticipated last year, we would expect a liability loss. Generally, we expect short-term fluctuations in demographic experience to create gains or losses of up to 3% of the Actuarial Accrued Liability in any given year, but to balance out in the long-term.

"Demographic Risk" occurs when Plan census 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 participants in the Plan, the Recommended Contribution has a moderate 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, which in turn, may increase the Recommended Contribution.

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

New Hires: The Fund added 3 new active Members in the current year through hiring. When a new 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 for the new Fund Members is approximately $13,000.

Disability: There was 1 Member of the Fund who became disabled during the year. When a Member becomes disabled, the Fund will often experience a decrease in Normal Cost, but an increase in Unfunded Liability. The increase in the Recommended Contribution in the current year for the new disability was approximately $5,000.

Termination: There were 2 non-vested Members of the Fund who terminated employment during the year. Neither Member took a refund. The Fund is no longer obligated to pay a benefit to the Members in the future. The decrease in the Recommended Contribution in the current year due to the termination experience is approximately $13,000.

Mortality: As the inactive population ages and continues to collect benefits, the Fund liability will increase. In the current year, there were 20 inactive participants 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 $13,000.

Data Correction: There were 4 Members of the Fund whose Tier was updated from Tier 2 last year to Tier 1 this year. The increase in the Recommended Contribution in the current year resulting from the tier corrections is approximately $45,000.

Salary Increases: Salary increases were less than anticipated in the current year. Most active Members received an increase of 3.25% or less. This caused a decrease in the Recommended Contribution in the current year of approximately $9,000.

Assumption Changes

In the current valuation, we have reviewed the individual pay increases assumption to reflect the settled bargaining agreement between the Village of Antioch, Illinois and the Illinois Fraternal Order of Police Labor Council for the period May 1, 2018 through April 30, 2020. The year over year step increases dictated by the wage schedule did not change significantly from the prior year contract, therefore, we have not updated the assumption for individual pay increases.

In the current valuation, we have updated the marital assumption for retiree and disabled Members to the actual spousal data. See the table on the following page for the impact of this change on the current valuation.

Funding Policy Changes

The Funding Policy was not changed from the prior year.

ACTUARIAL RECOMMENDED CONTRIBUTION – RECONCILIATION

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

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

	Actuarial Liability	Recommended Contribution
Prior Valuation	$ 30,551,726	$ 1,829,190
Expected Changes	1,374,906	59,449
Initial Expected Current Valuation	$ 31,926,632	$ 1,888,639

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 Unfunded Liability increases or decreases unexpectedly, the contribution towards Unfunded Liability will also change unexpectedly.

	Actuarial Liability	Recommended Contribution
Salary Increases Less than Expected	(72,699)	(9,414)
Demographic Changes	883,877	104,604
Assumption Changes	87,334	6,067
Asset Return Less than Expected *	-	15,413
Contributions Less than Expected	-	15,501
Total Actuarial Experience	$ 898,512	$ 132,172
Current Valuation	$ 32,825,144	$ 2,020,811

*The impact on contribution due to asset performance is based on the Actuarial Value of Assets.

Key demographic changes were discussed in the *Demographic Data* section of this report.

VALUATION OF FUND ASSETS

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

MARKET VALUE OF ASSETS

Statement of Assets

	Prior Valuation	Current Valuation
Cash and Cash Equivalents	$ 698,439	$ 1,203,142
US Government and Agency Obligations	1,801,937	1,956,736
Corporate Bonds	2,641,202	2,668,244
Stock Equities	-	1,904,374
Mutual Funds	4,078,666	2,447,520
Receivables (Net of Payables)	-	202
Total Market Value of Assets	$ 9,220,244	$ 10,180,218

The Total Market Value of Assets has Increased by Approximately $960,000 from the Prior Valuation.

Statement of Changes in Assets

Total Market Value of Assets - Prior Valuation	$ 9,220,244
Plus - Employer Contributions	1,608,383
Plus - Employee Contributions	229,716
Plus - Return on Investments	552,452
Less - Benefit and Related Payments	(1,380,968)
Less - Other Expenses	(49,609)
Total Market Value of Assets - Current Valuation	$ 10,180,218

The Rate of Return on Investments on the Market Value of Assets for the Fund was Approximately 5.3% Net of Administrative Expenses.

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

MARKET VALUE OF ASSETS (GAIN)/LOSS

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

Total Market Value of Assets - Prior Valuation	$ 9,220,244
Contributions	1,838,099
Benefit Payments	(1,380,968)
Expected Return on Investments	637,795
Expected Total Market Value of Assets - Current Valuation	10,315,170
Actual Total Market Value of Assets - Current Valuation	10,180,218
Current Market Value of Assets (Gain)/Loss	$ 134,952

Expected Return on Investments	$ 637,795
Actual Return on Investments (Net of Expenses)	502,843
Current Market Value of Assets (Gain)/Loss	$ 134,952

The Return on the Market Value of Assets was Lower Than Expected Over the Current Year.

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

DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS

Total Market Value of Assets - Current Valuation		$ 10,180,218
Adjustment for Prior (Gains)/Losses		
	Full Amount	
FYE 2019	$ 134,952	107,961
FYE 2018	281,394	168,836
FYE 2017	37,195	14,878
FYE 2016	493,969	98,794
Total Deferred (Gain)/Loss		390,469
Initial Actuarial Value of Assets - Current Valuation		$ 10,570,687
Less Contributions for the Current Year and Interest		-
Less Adjustment for the Corridor		-
Total Actuarial Value of Assets - Current Valuation		$ 10,570,687

The Actuarial Value of Assets is Equal to the Market Value of Assets with Unanticipated (Gains)/Losses Recognized Over 5 Years. The Actuarial Value of Assets is 103.8% of the Market Value of Assets.

ACTUARIAL VALUE OF ASSETS (GAIN)/LOSS

Total Actuarial Value of Assets - Prior Valuation	$ 9,708,690
Plus - Employer Contributions	1,608,383
Plus - Employee Contributions	229,716
Plus - Return on Investments	454,475
Less - Benefit and Related Payments	(1,380,968)
Less - Other Expenses	(49,609)
Total Actuarial Value of Assets - Current Valuation	$ 10,570,687

The Rate of Return on Investments on the Actuarial Value of Assets for the Fund was Approximately 4.1% Net of Administrative Expenses.

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

HISTORICAL ASSET PERFORMANCE

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

	Market Value of Assets	Actuarial Value of Assets
FYE 2019	5.3%	4.1%
FYE 2018	3.5%	3.6%
FYE 2017	6.3%	3.7%
FYE 2016	0.5%	3.5%

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

For purposes of determining the average value of assets during the year, the ending Market Value of Assets has been adjusted to net out to the portion related to the investment returns themselves. All other cash flows are included.

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

Expected Return on Investments Assumption

The Expected Return on Investments for this valuation is 6.75%. Lauterbach & Amen, LLP does not provide investment advice. We look at a variety of factors when reviewing the Expected 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 appropriate assumption for Expected 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 future contribution volatility.

"Investment Risk" is the potential that actual Return on Investments will be different from what is expected. The selected Expected 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 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 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 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 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 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 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
Schedule of Amortization – Unfunded Actuarial Accrued Liability
Actuarial Methods – Recommended Contribution

ACTUARIAL ACCRUED LIABILITY

	Prior Valuation	Current Valuation
Active Employees	$ 8,896,590	$ 9,861,037
Inactive Employees		
Terminated Employees - Vested	-	-
Retired Employees	17,775,460	18,099,412
Disabled Employees	2,745,267	3,753,529
Other Beneficiaries	1,134,409	1,111,166
Total Inactive Employees	21,655,136	22,964,107
Total Actuarial Accrued Liability	$ 30,551,726	$ 32,825,144

The Total Actuarial Accrued Liability has Increased by Approximately $2,273,000 from the Prior Valuation.

FUNDED STATUS

	Prior Valuation	Current Valuation
Total Actuarial Accrued Liability	$ 30,551,726	$ 32,825,144
Total Actuarial Value of Assets	9,708,690	10,570,687
Unfunded Actuarial Accrued Liability	$ 20,843,036	$ 22,254,457
Total Market Value of Assets	$ 9,220,244	$ 10,180,218
Percent Funded		
Actuarial Value of Assets	31.78%	32.20%
Market Value of Assets	30.18%	31.01%

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

DEVELOPMENT OF THE EMPLOYER NORMAL COST

	Prior Valuation	Current Valuation
Total Normal Cost	$ 630,535	$ 683,031
Estimated Employee Contributions	(231,883)	(239,317)
Employer Normal Cost	$ 398,652	$ 443,714

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	$ 2,339,894	$ 2,414,900
Employee Normal Cost Rate	9.910%	9.910%
Employer Normal Cost Rate	17.04%	18.37%
Total Normal Cost Rate	26.95%	28.28%

Ideally, the Employer Normal Cost Rate will Remain Stable.

RECOMMENDED CONTRIBUTION

	Prior Valuation	Current Valuation
Employer Normal Cost*	$ 425,561	$ 473,665
Amortization of Unfunded Accrued Liability/(Surplus)	1,403,629	1,547,146
Recommended Contribution	$ 1,829,190	$ 2,020,811

The Recommended Contribution has Increased by 10.5% from the Prior Valuation.

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

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	$ 221,707	4/30/2019	$ 221,707	21	$ 15,413
Actuarial (Gain)/Loss	1,014,563	4/30/2019	1,014,563	21	70,533
Contribution Experience	84,541	4/30/2019	84,541	21	5,877
Assumption Changes	87,334	4/30/2019	87,334	21	6,072
Investment (Gain)/Loss	235,911	4/30/2018	235,948	21	16,403
Actuarial (Gain)/Loss	926,878	4/30/2018	927,024	21	64,447
Contribution Experience	261,573	4/30/2018	261,614	21	18,188
Initial Unfunded Liability	$ 19,418,674	4/30/2018	$ 19,421,727	21	$ 1,350,213
Total	**$ 22,251,181**		**$ 22,254,457**		**$ 1,547,146**

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

ACTUARIAL METHODS – RECOMMENDED CONTRIBUTION

Actuarial Valuation Date	May 1, 2019
Data Collection Date	April 30, 2019
Actuarial Cost Method	Entry Age Normal (Level % Pay)
Amortization Method	Level % Pay (Closed)
Amortization Target	100% Funded Over 21 Years
Asset Valuation Method	5-Year Smoothed Market Value

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

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.

ILLINOIS STATUTORY MINIMUM CONTRIBUTION

Statutory Minimum Contribution
Funded Status – Statutory Minimum
Actuarial Methods – Illinois Statutory Minimum Contribution

STATUTORY MINIMUM CONTRIBUTION

	Current Valuation
Statutory Minimum Contribution	$1,731,507
Expected Payroll	$2,414,900
Statutory Minimum Contribution as a Percent of Expected Payroll	71.70%

FUNDED STATUS – STATUTORY MINIMUM

	Current Valuation
Normal Cost	$707,512
Market Value of Assets	$10,180,218
Actuarial Value of Assets	$10,570,687
Actuarial Accrued Liability	$31,430,977
Unfunded Actuarial Accrued Liability	$20,860,290
Percent Funded	
Actuarial Value of Assets	33.63%
Market Value of Assets	32.39%

ILLINOIS STATUTORY MINIMUM CONTRIBUTION

The Statutory Minimum Contribution is based on Actuarial Funding Methods and funding parameters in the Illinois statutes for pension funding. The resulting contribution is lower than the Recommended Contribution for the current plan year. The lower 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. Beneficiaries – 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 employees

The Statutory Minimum 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 Statutory Minimum methods put into place in 2011 were intended to provide short-term budget relief for Employer Contributions. An Employer using the Statutory Minimum parameters 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.

ACTUARIAL METHODS – ILLINOIS STATUTORY MINIMUM CONTRIBUTION

Actuarial Valuation Date	May 1, 2019
Data Collection Date	April 30, 2019
Actuarial Cost Method	Projected Unit Credit (Level % of Pay)
Amortization Method	Level % Pay (Closed)
Remaining Amortization Period	90% Funded Over 21 Years
Asset Valuation Method	5-Year Smoothed Market Value

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

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 Employees
Inactive Employees
Summary of Benefit Payments

ACTIVE EMPLOYEES

	Prior Valuation	Current Valuation
Vested	16	16
Nonvested	11	11
Total Active Employees	27	27
Total Payroll	$ 2,302,479	$ 2,376,285

INACTIVE EMPLOYEES

	Prior Valuation	Current Valuation
Terminated Employees - Vested	0	0
Retired Employees	14	14
Disabled Employees	4	5
Other Beneficiaries	2	2
Total Inactive Employees	20	21

SUMMARY OF BENEFIT PAYMENTS

	Prior Valuation	Current Valuation
Terminated Employees - Vested	$ -	$ -
Retired Employees	86,048	89,641
Disabled Employees	13,978	18,660
Other Beneficiaries	9,208	9,208
Total Inactive Employees	$ 109,233	$ 117,508

ACTUARIAL FUNDING POLICIES

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

ACTUARIAL COST METHOD

The Actuarial Cost Method allocates the projected obligations of the plan over the working lifetimes of the plan participants.

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 participant'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

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 Office 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 21 years. See the *Actuarial Methods – Recommended Contribution* section of this report for more detail.

Best practice requires a review of core Funding Policy objectives of multiple stakeholders, including Members, Pension Boards, Employers and taxpayers. Over the past five years these objectives have been reviewed and discussed extensively by a variety of organizations, including most U.S.-based Actuarial associations, and the Government Finance Officers Association. The results provide a good foundation of common practices viewed as "model" or "best" practices.

A critical piece to the discussion of Funding Policy is the parameters in place for paying down unfunded liability. Time and style of payoff can have a significant impact on the goals of the stakeholders. The current Funding Policy includes a payoff period greater than 20 years. Generally, the preference is to have a dedicated payoff period for any new Unfunded Liability that starts in the 15-20 year range. This provides a good balance in paying off Unfunded Liability relatively efficiently, while limiting the contribution volatility of future adverse experience.

The Fund is close to the 15-20 year range for payoff of the current Unfunded Liability. We recommend allowing the Unfunded Liability payoff period to continue as is to reach the 15-20 year range. In addition, we recommend that the Fund consider handling new Unfunded Liability in separate buckets to help manage long-term volatility while maintaining full transparency and accountability for the Unfunded Liability.

ACTUARIAL VALUE OF ASSETS

The Pension Fund is an ongoing plan. The Employer wishes to smooth the effect of volatility in the Market Value of Assets on the annual contribution. Therefore, the Actuarial Value of Assets is equal to the Market 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 Market Value of Assets over time. The method produces results that can fall either above or below the Market 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 Market Value. In the event that the Actuarial Value of Assets exceeds or falls below a 10% corridor of the Market 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
Actuarial Assumptions Utilized

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 participant 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 information furnished, using the Actuarial Cost Methods described in the *Actuarial Funding Policies* section of this report.

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

- Long-term Expected Return on Investments
- Patterns of pay increases for Members
- Rates of Mortality among Members and Beneficiaries
- Rates of Withdrawal of Active Members
- Rates of Disability among Members
- Age patterns of actual retirement

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 Assumptions 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.

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 demographic 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 of the Management Summary of this report
- Review any material changes in the covered population as summarized in the *Actuarial Valuation Data* section of this report
- Provide and discuss a separate written Assumptions Summary document highlighting the rationale for each key economic and demographic assumption chosen by the Plan Sponsor
- Identify potential cash flow risks by highlighting expected benefit payments over the next 5-year and 10-year periods in the *Asset Growth* section in this report
- Describe the impact of any assumption, method, or policy change in the Management Summary
- Utilize supplemental information, such as the GASB discount rate sensitivity disclosures to understand, for example, what impact an alternative Expected 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 Antioch Police Pension Fund and/or the Village of Antioch, Illinois should contact the Actuary if they desire a more detailed assessment of any of these forward-looking risk exposures.

ACTUARIAL ASSUMPTIONS UTILIZED

Expected Return on Investments 6.75% Net of Administrative Expenses

CPI-U 2.50%

Total Payroll Increases 3.25%

Individual Pay Increases 4.00% - 8.03%

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

Service	Rate	Service	Rate
0	8.03%	8	4.00%
1	8.00%	9	4.00%
2	8.01%	10	4.00%
3	7.99%	15	4.00%
4	8.00%	20	4.00%
5	8.02%	25	4.00%
6	8.00%	30	4.00%
7	7.96%	35	4.00%

Retirement Rates 100% of the L&A Assumption Study Cap Age 65 for Police 2016. Sample rates as follows:

Age	Rate	Age	Rate
50	11.66%	53	13.89%
51	12.36%	54	14.72%
52	13.10%	55	15.60%

Withdrawal Rates

100% of the L&A Assumption Study for Police 2016. Sample rates as follows:

Age	Rate	Age	Rate
25	4.06%	40	2.69%
30	3.89%	45	1.36%
35	3.61%	50	0.31%

Disability Rates

100% of the L&A Assumption Study for Police 2016. Sample rates as follows:

Age	Rate	Age	Rate
25	0.05%	40	0.28%
30	0.10%	45	0.43%
35	0.18%	50	0.64%

Mortality Rates

Active Mortality follows the Sex Distinct Raw Rates as developed in the RP-2014 Study, with Blue Collar Adjustment. These rates are improved generationally using MP-2016 Improvement Rates.

Retiree Mortality follows the L&A Assumption Study for Police 2016. These rates are experience weighted with the Raw Rates as developed in the RP-2014 Study, with Blue Collar Adjustment and improved generationally using MP-2016 Improvement Rates.

Disabled Mortality follows the Sex Distinct Raw Rates as developed in the RP-2014 Study for Disabled Participants. These rates are improved generationally using MP-2016 Improvement Rates.

Spouse Mortality follows the Sex Distinct Raw Rates as developed in the RP-2014 Study. These rates are improved generationally using MP-2016 Improvement Rates.

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
Employee Contributions
Regular Retirement Pension Benefit
Early Retirement Pension Benefit
Surviving Spouse Benefit
Termination Benefit – Vested
Disability Benefit

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.

EMPLOYEE CONTRIBUTIONS

Employees contribute 9.910% of pensionable salary.

REGULAR RETIREMENT PENSION BENEFIT

Hired Prior to January 1, 2011

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 higher 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.

REGULAR RETIREMENT PENSION BENEFIT - CONTINUED

Hired on or After January 1, 2011

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 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. Annual salary for this purpose will not exceed the salary cap, indexed by the lesser of 3% or ½ of 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

Hired Prior to January 1, 2011

None.

Hired on or After January 1, 2011

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 retirement 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

Hired Prior to January 1, 2011

Eligibility: Married to an active police officer with at least 8 years of creditable service or disabled pensioner at the time of death or married to 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 Employee with 20+ Years of Service: An eligible surviving spouse is entitled to the police officer's benefit at the time of death.

Active Employee with 10-20 Years of Service: An eligible surviving spouse is entitled to receive 50% of the police officer's pro-rated pensionable salary attached to rank over the last 12 months.

Annual Increase in Benefit: None.

Hired on or After January 1, 2011

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

Non-Duty Death Benefit:

Disabled or Retired Pensioner, Active Employee with 20+ Years of Service, and Active Employee with 10-20 Years of service: An eligible surviving spouse is entitled to receive 66 ⅔% of the police officer's pension benefit 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.

TERMINATION BENEFIT – VESTED

Hired Prior to January 1, 2011

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 higher 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 on 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.

Hired on or After January 1, 2011

None.

DISABILITY BENEFIT

Hired Prior to January 1, 2011

Eligibility: Duty or Non-Duty Disability.

Benefit: For a duty disability, 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.

Hired on or after January 1, 2011

Eligibility: Duty or Non-Duty Disability.

Benefit: For a duty disability, 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 employees' 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 participants.

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 Market 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 Market Value of Assets, and generally does not experience as much volatility over time as the Market 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 sponsor meet their goal of working in the best interest of the plan participant.

Market 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 employees 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

GASB 67/68 Report
For Use in Financial Statement Reporting

ANTIOCH POLICE PENSION FUND

Actuarial Valuation
as of May 1, 2018

LAUTERBACH & AMEN, LLP

GASB Statements 67 and 68 Actuarial Disclosures

Lauterbach & Amen, LLP

CERTIFIED PUBLIC ACCOUNTANTS

GASB 67: ANTIOCH POLICE PENSION FUND

Fiscal Year Ended: April 30, 2019
Actuarial Valuation Date: May 1, 2018
Utilizing Data as of April 30, 2018
Measurement Date: April 30, 2019

GASB 68: VILLAGE OF ANTIOCH, ILLINOIS

Fiscal Year Ended: April 30, 2019
Actuarial Valuation Date: May 1, 2018
Utilizing Data as of April 30, 2018
Measurement Date: April 30, 2019

Submitted by:

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

Contact:

Todd A. Schroeder
Director
October 2, 2019

LAUTERBACH & AMEN, LLP

TABLE OF CONTENTS

ACTUARIAL CERTIFICATION 1

PLAN FIDUCIARY NET POSITION 2

Statement of Plan Fiduciary Net Position 3
Statement of Changes in Plan Fiduciary Net Position 4

ACTUARIAL PENSION LIABILITY INFORMATION 5

Statement of Total Pension Liability 6
Statement of Changes in Total Pension Liability 7
Statement of Changes in Net Pension Liability 8
Deferred Outflows and Inflows of Resources 9
Deferred Outflows and Inflows of Resources – Detail 10
Pension Expense Development 11

ACTUARIAL ASSUMPTIONS INFORMATION 12

Statement of Significant Actuarial Assumptions 13
Assumption Changes 13
Notes on Actuarial Assumptions 15
Postemployment Benefit Changes 16
Expected Return on Pension Plan Investments 17
Municipal Bond Rate 18
Discount Rate 18
Sensitivity of the Discount Rate 19

PARTICIPANT DATA 20

Participant Demographic Data 21
Expected Future Working Lifetime 21

FUNDING POLICY 22

Components of the Actuarially Determined Contribution 23
Formal Funding Policy 23
Informal Funding Policy 23
Funding Policy – Other Considerations 25

SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION 26

Schedule of Changes in the Net Pension Liability 27
Schedule of Total Pension Liability and Related Ratio 28
Schedule of Contributions 29
Notes to Schedule of Contributions 29

GASB METHODS AND PROCEDURES 30

GASB Methods and Procedures 31

TABLE OF CONTENTS

SUPPLEMENTARY TABLES 32
GASB Projections – Summary and Procedure 33
GASB Projections – Limitations 34
Projection of Contributions – Years 1 to 30 35
Projection of Contributions – Years 31 to 60 36
Projection of Contributions – Years 61 to 80 37
Notes to Projection of Contributions 37
Projection of the Pension Plan's Fiduciary Net Position – Years 1 to 30 38
Projection of the Pension Plan's Fiduciary Net Position – Years 31 to 60 39
Projection of the Pension Plan's Fiduciary Net Position – Years 61 to 80 40
Notes to Projection of the Pension Plan's Fiduciary Net Position 40
Actuarial Present Value of Projected Benefit Payments – Years 1 to 30 41
Actuarial Present Value of Projected Benefit Payments – Years 31 to 60 42
Actuarial Present Value of Projected Benefit Payments – Years 61 to 80 43
Notes to the Actuarial Present Value of Projected Benefit Payments 43

Lauterbach & Amen, LLP
CERTIFIED PUBLIC ACCOUNTANTS
668 NORTH RIVER RD. • NAPERVILLE, ILLINOIS 60563
PHONE 630.393.1483 • FAX 630.393.2516
www.lauterbachamen.com

ACTUARIAL CERTIFICATION

This certification provides supplemental information as required by the Governmental Accounting Standards Board. The enclosed schedules were prepared by the undersigned to assist in the preparation of the Comprehensive Annual Financial Report. The assumptions and methods used in the preparation of this report meet the parameters set for the disclosures presented in the financial section as required by the Governmental Accounting Standards Board. Additional information is provided solely to assist the Auditors in their preparation of the required footnote disclosures.

The results in this report are based on the participant data and financial information submitted by the Antioch Police Pension Fund, and may include results from the prior Actuary. We did not prepare the Actuarial Valuations for the years prior to May 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.

The valuation results summarized in this report involve actuarial calculations that require assumptions about future events. The Antioch 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.

To the best of our knowledge, all calculations are in accordance with the applicable accounting requirements, and the procedures followed and presentation of results conform to generally accepted actuarial principles and practices. 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 Antioch Police Pension Fund or the Village of Antioch, Illinois and Lauterbach & Amen, LLP that impairs our objectivity.

Respectfully Submitted,

LAUTERBACH & AMEN, LLP

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

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

PLAN FIDUCIARY NET POSITION

Statement of Plan Fiduciary Net Position
Statement of Changes in Plan Fiduciary Net Position

STATEMENT OF PLAN FIDUCIARY NET POSITION

	2018	2019
Assets		
Cash and Cash Equivalents	$ 698,439	$ 1,203,142
Total Cash	698,439	1,203,142
Receivables:		
Due from Treasury	-	5,938
Investment Income - Accrued Interest	-	-
Total Receivables	-	5,938
Investments:		
U.S. Govt and Agency Obligations	1,801,937	1,956,737
Corporate Bonds	2,641,202	2,668,244
Mutual Funds	1,916,728	2,447,519
Common Stock	2,161,938	1,904,374
Total Investments	8,521,805	8,976,874
Total Assets	9,220,244	10,185,954
Liabilities		
Payables:		
Expenses Due/Unpaid	-	5,736
Total Liabilities	-	5,736
Net Position Restricted for Pensions	$ 9,220,244	$ 10,180,218

The Plan Fiduciary Net Position shown above is intended to be in accordance with GAAP and the Governmental Accounting Standards Board. The Fair Market Value of Investments have been provided by the reporting entity, and the results are being audited by an independent Auditor. The level of the assets has been reviewed for reasonableness, but we make no representation as to the accuracy of the measurement of the Fair Market Value of Investments. The Statement of Plan Fiduciary Net Position for 2019 is based on Fiscal Year End financials, which are preliminary and tentative – subject to change as of the preparation of this report.

STATEMENT OF CHANGES IN PLAN FIDUCIARY NET POSITION

	2019
Additions	
Contributions	
Employer	$ 1,608,383
Member	229,716
Total Contributions	1,838,099
Investment Income	
Net Appreciation in Fair Value of Investments	277,556
Interest and Dividends	299,736
Less Investment Expense	(24,840)
Net Investment Income	552,452
Total Additions	2,390,551
Deductions	
Benefit Payments and Refunds of Member Contributions	1,380,968
Administrative Expense	49,609
Total Deductions	1,430,577
Net Increase in Net Position	959,974
Net Position Restricted for Pensions	
Beginning of Year	9,220,244
End of Year	$ 10,180,218

The change in Plan Fiduciary Net Position shown above is intended to be in accordance with GAAP and the Governmental Accounting Standards Board. The Plan activity has been provided by the reporting entity, and the results are being audited by an independent Auditor. The cash flows have been reviewed for reasonableness, but we make no representation as to the accuracy of the measurement of the Fair Market Value of Investments. The Statement of Changes in Plan Fiduciary Net Position for 2019 is based on Fiscal Year End financials, which are preliminary and tentative – subject to change as of the preparation of this report.

ACTUARIAL PENSION LIABILITY INFORMATION

Statement of Total Pension Liability
Statement of Changes in Total Pension Liability
Statement of Changes in Net Pension Liability
Deferred Outflows and Inflows of Resources
Deferred Outflows and Inflows of Resources – Detail
Pension Expense Development

STATEMENT OF TOTAL PENSION LIABILITY

	2018	2019
Active Employees	$ 11,962,260	$ 11,566,829
Inactive Employees		
Terminated Employees - Vested	-	-
Retired Employees	19,480,196	19,372,609
Disabled Employees	2,026,596	3,006,478
Other Beneficiaries	291,386	1,154,406
Total Inactive Employees	21,798,178	23,533,493
Total Pension Liability	$ 33,760,438	$ 35,100,322

The Total Pension Liability ("TPL") shown above is dependent on several factors such as Plan Provisions and actuarial assumptions used in this report. In addition, the calculation of the TPL may be dependent on the Plan Fiduciary Net Position shown in the prior section of this report. Changes in the Plan Fiduciary Net Position due to any factor, including adjustments on final audit, may change the TPL. The dependence of the TPL on the Plan Fiduciary Net Position is due to the role of the Plan Fiduciary Net Position (and the Plan's Projected Fiduciary Net Position) on the determination of the Discount Rate used for the TPL.

The TPL has been determined for GASB 67/68 reporting purposes only. The resulting TPL is intended to be used in the financial statement reporting of the Plan and/or Employer. The resulting liability is not intended to be a representation of the Plan liability for other purposes, including but not limited to, determination of cash funding requirements and recommendations. The TPL is based on data used for the Actuarial Valuation Date as shown in this report. The TPL has been determined as of the Actuarial Valuation Date and based on the assumptions shown in this report, adjusted to the Measurement Date as needed.

STATEMENT OF CHANGES IN TOTAL PENSION LIABILITY

	2019
Changes in Total Pension Liability	
Service Cost	$ 833,386
Interest	1,954,434
Changes of Benefit Terms	-
Differences Between Expected and Actual Experience	883,165
Changes in Assumptions	(950,133)
Benefit Payments and Refunds	(1,380,968)
Net Change in Total Pension Liability	1,339,884
Total Pension Liability - Beginning	33,760,438
Total Pension Liability - Ending (a)	$ 35,100,322
Plan Fiduciary Net Position - Ending (b)	$ 10,180,218
Employer's Net Pension Liability - Ending (a) - (b)	$ 24,920,104
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	29%
Covered-Employee Payroll	$ 2,377,310
Employer's Net Pension Liability as a Percentage of Employee Payroll	1,048%

The Plan Fiduciary Net Position was detailed in the prior section of this report. The employer's Net Pension Liability is the excess of the Total Pension Liability over the Plan Fiduciary Net Position.

Total Pension Liability may be dependent on the Fiduciary Net Position of the Fund. Changes in the Fiduciary Net Position could change the determination of the Total Pension Liability. Any changes in Fiduciary Net Position including adjustments on final audit can have an impact on Net Pension Liability that extends beyond the dollar-for-dollar change in Fiduciary Net Position.

Covered Employee Payroll is estimated based on prior year pensionable payroll and expected increases for the Fund members during the fiscal year.

STATEMENT OF CHANGES IN NET PENSION LIABILITY

The table below illustrates the change in the Net Pension Liability (NPL) from the prior Measurement Date to the current Measurement Date. Under Statement 68, the difference between the NPL from the prior Measurement Date to the current Measurement Date should be recognized as a component of Pension Expense, unless permitted to be recognized as a Deferred Outflow or Inflow of Resources.

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances Beginning at 05/01/18	$ 33,760,438	$ 9,220,244	$ 24,540,194
Changes for the year:			
Service Cost	833,386	-	833,386
Interest	1,954,434	-	1,954,434
Actuarial Experience	883,165	-	883,165
Assumptions Changes	(950,133)	-	(950,133)
Plan Changes	-	-	-
Contributions - Employer	-	1,608,383	(1,608,383)
Contributions - Employee	-	229,716	(229,716)
Contributions - Other	-	-	-
Net Investment Income	-	552,452	(552,452)
Benefit Payments and Refunds	(1,380,968)	(1,380,968)	-
Administrative Expense	-	(49,609)	49,609
Net Changes	1,339,884	959,974	379,910
Balances Ending at 04/30/19	$ 35,100,322	$ 10,180,218	$ 24,920,104

The changes in Total Pension Liability above are described on the prior page. The Plan Fiduciary Net Position was detailed in the prior section of this report. The employer's Net Pension Liability is the excess of the Total Pension Liability over the Plan Fiduciary Net Position.

DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES

The table below shows the cumulative amounts to be shown as Deferred Outflows and Inflows of Resources. Changes in Total Pension Liability related to the difference in actual and expected experience, or changes in assumptions regarding future events, are recognized in Pension Expense over the expected remaining service life of all employees (active and retired) in the Pension Fund. Differences in projected and actual earnings over the measurement period are recognized over a 5-year period. Amounts not yet recognized are summarized below:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences Between Expected and Actual Experience	$ 1,348,848	$ -
Changes of Assumptions	2,347,810	1,018,074
Net Difference Between Projected and Actual Earnings on Pension Plan Investments	312,447	-
Contributions Subsequent to the Measurement Date*	-	-
Total	$ 4,009,105	$ 1,018,074

* Contributions subsequent to the Measurement Date may be recognized as a reduction to the Net Pension Liability. The amount is not known as of the date of this report. Subsequent to the Measurement Date, the following amounts will be recognized in Pension Expense in the upcoming years:

Year Ended April 30:	
2020	$ 716,810
2021	621,818
2022	619,360
2023	570,823
2024	242,633
Thereafter	219,587

DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES – DETAIL

The table below shows the annual detail amounts that have been summarized on the prior page. Under Statement 68, the level of detail shown on the prior page is sufficient for financial statement reporting. The detail shown below is primarily for tracking purposes.

Pension Expense Source	Date Established	Initial Period	Initial Balance	Remaining Period	4/30/2019 Expense Recognized	4/30/2019 Deferred Balance
Asset Loss	4/30/2019	5.00	$ 83,668	5.00	$ 16,734	$ 66,934
Change in Assumptions Gain	4/30/2019	8.11	(950,133)	8.11	(117,156)	(832,977)
Actuarial Loss	4/30/2019	8.11	883,165	8.11	108,899	774,266
Asset Loss	4/30/2018	5.00	242,675	4.00	48,535	145,605
Change in Assumptions Loss	4/30/2018	8.41	1,382,993	7.41	164,447	1,054,099
Actuarial Loss	4/30/2018	8.41	103,287	7.41	12,282	78,723
Asset Loss	4/30/2017	5.00	12,290	3.00	2,458	4,916
Change in Assumptions Gain	4/30/2017	8.41	(287,739)	6.41	(34,214)	(185,097)
Actuarial Loss	4/30/2017	8.41	38,375	6.41	4,564	24,683
Asset Loss	4/30/2016	5.00	474,968	2.00	94,994	94,992
Change in Assumptions Loss	4/30/2016	8.25	2,511,327	5.25	304,404	1,293,711
Actuarial Loss	4/30/2016	8.25	914,636	5.25	110,865	471,176
Total			$ 5,409,512		$ 716,812	$ 2,991,031

Each detail item in the chart above was established as of the fiscal year end shown and the full amount deferred has been determined as of that time. Any events that occur in subsequent fiscal years do not have an impact on the prior fiscal year. The bases are established independently each year.

PENSION EXPENSE DEVELOPMENT

The table below displays the Pension Expense development for the current year. The Pension Expense includes items that change the Net Pension Liability from one year to the next, netted out for amounts that are deferred under GASB pronouncement, plus any amounts that are being recognized that were deferred previously.

See below for development of the Pension Expense:

	2019
Pension Expense/(Income) Under GASB 68	
Service Cost	$ 833,386
Interest	1,954,434
Plan Changes	-
Contributions - Employee	(229,716)
Contributions - Other	-
Expected Investment Income	(636,120)
Administrative Expense	49,609
Other Changes	-
Initial Pension Expense/(Income)	1,971,593
Recognition of Outflow/(Inflow) of Resources due to Liabilities	554,091
Recognition of Outflow/(Inflow) of Resources due to Assets	162,721
Total Pension Expense/(Income)	**$ 2,688,405**

ACTUARIAL ASSUMPTIONS INFORMATION

Statement of Significant Actuarial Assumptions
Assumption Changes
Notes on Actuarial Assumptions
Expected Return on Pension Plan Investments
Municipal Bond Rate
Discount Rate
Sensitivity of the Discount Rate

STATEMENT OF SIGNIFICANT ACTUARIAL ASSUMPTIONS

Actuarial Assumptions (Economic)

Discount Rate used for the Total Pension Liability	6.09%
Long-Term Expected Rate of Return on Plan Assets	6.75%
High Quality 20 Year Tax-Exempt G.O. Bond Rate	3.79%
Projected Individual Pay Increases	4.00% - 8.03%
Projected Increase in Total Payroll	3.25%
Consumer Price Index (Urban)	2.50%
Inflation Rate Included	2.50%

Actuarial Assumptions (Demographic)

Mortality Table	RP-2014 Adjusted for Plan Status, Collar, and Illinois Public Pension Data, as Appropriate
Retirement Rates	L&A 2016 Illinois Police Retirement Rates Capped at age 65
Disability Rates	L&A 2016 Illinois Police Disability Rates
Termination Rates	L&A 2016 Illinois Police Termination Rates
Percent Married	80%

All rates shown in the economic assumptions are assumed to be annual rates, compounded on an annual basis. For more information on the selection of the actuarial assumptions, please see the Assumption Summary prepared for the Fund, available upon request.

ASSUMPTION CHANGES

The assumptions were changed from the prior year.

The assumed rate on High Quality 20 Year Tax-Exempt General Obligation (G.O.) Bonds was changed from 3.97% to 3.79% for the current year. The underlying index used is The Bond Buyer 20-Bond G.O. Index as discussed in more detail later in this section. The choice of index is unchanged from the prior year. The rate has been updated to the current fiscal year end based on changes in market conditions as reflected in the Index. The change was made to reflect our understanding of the requirements of GASB under Statement 67 and Statement 68.

The discount rate used in the determination of the Total Pension Liability was changed from 5.91% to 6.09%. The discount rate is impacted by a couple of metrics. Any change in the underlying High Quality 20 Year Tax Exempt G.O. Bond Rate will impact the blended discount rate.

In the current valuation, we have reviewed the individual pay scale assumption to reflect the settled bargaining agreement between the Village of Antioch, Illinois and the Illinois Fraternal Order of Police Labor Council for the period May 1, 2018 through April 30, 2020. The year over year step increases dictated by the wage schedule did not change significantly from the prior year contract, therefore, we have not updated the assumption for individual pay increases.

In addition, there are changes that can be made that impact the projection of the Fiduciary Net Position of the Fund. For example, changes in the Formal or Informal Funding Policy can impact the discount rate. Actual changes in the Fiduciary Net Position from one year to the next can impact the projections as well.

NOTES ON ACTUARIAL ASSUMPTIONS

Individual Pay Increases

Individual pay increases include provisions for annual cost of living increases, plus any additional increases in pensionable pay provided (step increases, longevity increases, promotions, educations, etc). Sample rates are as follows:

Service	Rate	Service	Rate
0	8.03%	8	4.00%
1	8.00%	9	4.00%
2	8.01%	10	4.00%
3	7.99%	15	4.00%
4	8.00%	20	4.00%
5	8.02%	25	4.00%
6	8.00%	30	4.00%
7	7.96%	35	4.00%

Demographic Assumptions

Active Mortality follows the Sex Distinct Raw Rates as developed in the RP-2014 Study, with Blue Collar Adjustment. These rates are improved generationally using MP-2016 Improvement Rates.

Retiree Mortality follows the L&A Assumption Study for Police 2016. These rates are experience-weighted with the Raw Rates as developed in the RP-2014 Study, with Blue Collar Adjustment and improved generationally using MP-2016 Improvement Rates.

Disabled Mortality follows the Sex Distinct Raw Rates as developed in the RP-2014 Study for Disabled Participants. These rates are improved generationally using MP-2016 Improvement Rates.

Spouse Mortality follows the Sex Distinct Raw Rates as developed in the RP-2014 Study. These rates are improved generationally using MP-2016 Improvement Rates.

Other demographic assumption rates are based on a review of assumptions in the L&A 2016 study for Illinois Police Officers.

POSTEMPLOYMENT BENEFIT CHANGES

Eligibility for postemployment benefit increases is determined based on the Illinois Pension code. Tier 1 Police retirees are provided with an annual 3.0% increase in retirement benefits by statute when eligible. Tier 2 Police retirees are provided postemployment benefit increases based on one-half of the Consumer Price Index (Urban) for the prior September.

The CPI-U for September 1985 was 108.3. The CPI-U for September 2018 was 252.4. The average increase in the CPI-U for September 1985 through September 2018 was 2.61% (on a compounded basis).

EXPECTED RETURN ON PENSION PLAN INVESTMENTS

The Long-Term Expected Rate of Return on assets is intended to represent the best estimate of future real rates of return and is shown for each of the major asset classes in the investment policy. The Expected Rates of Return shown below have been provided by the investment professionals that work with the Pension Fund. The table below illustrates the best estimate of Long-Term Expected Real Rates of Return developed for each of the major asset classes, adjusted for expected inflation.

There are multiple approaches seen to providing these rates. Typically, the information is either based on capital market projections, or historical rates seen for the asset classes. We do not provide an opinion on the reasonableness of the returns provided nor the reasonableness of the approach used in the determination of the rates provided. The information provided is shown below for convenience.

The rates provided in the table below are based on an arithmetic average. The Investment Policy Statement will provide more detail regarding the Fund's policies on asset allocation targets and acceptable ranges.

Asset Class	Long-Term Expected Rate of Return	Long-Term Inflation Expectations	Long-Term Expected Real Rate of Return	Target Allocation
Equity	11.53%	3.34%	8.19%	35.00%
Fixed Income	7.33%	3.34%	3.99%	64.00%
Cash Equivalents	4.43%	3.34%	1.09%	1.00%

Long-Term Expected Real Rates of Return under GASB are expected to reflect the period of time that begins when a Plan member begins to provide service to the employer and ends at the point when all benefits to the Plan member have been paid. The rates provided above are intended to estimate those figures.

The Long-Term Inflation Expectation is 3.34% and is included in the Long-Term Expected Rates of Return. The Long-Term Inflation Expectation is from the same source as the Long-Term Expected Real Rates of Return, and is not necessarily reflective of the inflation measures used for other purposes in the report.

Geometric rates of return are equal to arithmetic rates of return when the annual returns exhibit no volatility over time. When arithmetic returns are volatile on a year-to-year basis, the actual realized geometric returns over time will be lower. Higher volatility results in a greater difference.

MUNICIPAL BOND RATE

The municipal bond rate assumption is based on The Bond Buyer 20-Bond G.O. Index. The rate shown earlier in this section of the report is the April 25, 2019 rate. The 20-Bond G.O. Index is based on an average of certain general obligation municipal bonds maturing in 20 years and having an average rating equivalent of Moody's Aa2 and Standard & Poor's AA.

The 20-Bond G.O. Index consists of 20 general obligation bonds that mature in 20 years. The average rating of the 20 bonds is roughly equivalent to Moody's Investors Service's Aa2 rating and Standard & Poor's Corp.'s AA.

The indices represent theoretical yields rather than actual price or yield quotations. Municipal bond traders are asked to estimate what a current-coupon bond for each issuer in the indices would yield if the bond was sold at par value. The indices are simple averages of the average estimated yields of the bonds.

DISCOUNT RATE

The discount rate used in the determination of the Total Pension Liability is based on a combination of the Long-Term Expected Rate of Return on Plan investments and the municipal bond rate.

Cash flow projections were used to determine the extent to which the Plan's future Fiduciary Net Position will be able to cover future benefit payments. To the extent future benefit payments are covered by the Plan's projected Fiduciary Net Position, the Long-Term Expected Rate of Return on Plan investments is used to determine the portion of the Net Pension Liability associated with those payments. To the extent future benefit payments are not covered by the Plan's projected Fiduciary Net Position, the municipal bond rate is used to determine the portion of the Net Pension Liability associated with those payments.

Projected benefit payments are determined during the actuarial process based on the assumptions. More details on the assumptions are in the prior section. The expected contributions are based on the funding policy of the Plan. The funding policy is discussed in more detail in the *Funding Policy* section of this report.

SENSITIVITY OF THE DISCOUNT RATE

The Net Pension Liability has been determined using the discount rate listed earlier in this section of the report. Below is a table illustrating the sensitivity of the Net Pension Liability to the discount rate assumption.

	1% Decrease (5.09%)	Current Discount Rate (6.09%)	1% Increase (7.09%)
Employer Net Pension Liability	$30,735,618	$24,920,104	$20,282,051

The sensitivity of the Net Pension Liability to the discount rate is based primarily on two factors:

1. The duration of the Plan's expected benefit payments. Younger plans with benefit payments further in the future will be more sensitive to changes in the discount rate.

2. The funded percentage of the Plan (ratio of the Fiduciary Net Position to the Total Pension Liability). The higher the funded percentage, the higher the sensitivity to the discount rate.

PARTICIPANT DATA

Participant Demographic Data
Expected Future Working Lifetime

PARTICIPANT DEMOGRAPHIC DATA

The chart below summarizes the employee count and payroll as of April 30:

	2017	2018
Inactive Plan Members or Beneficiaries Currently Receiving Benefits	18	20
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	0	0
Active Plan Members	27	27
Total	45	47
Payroll of Active Plan Members	$ 2,259,093	$ 2,302,479

Participant counts shown above are as of the Actuarial Valuation Date for the two most recent fiscal years. Payroll of Active Plan Members is the pensionable rate of salary for active Plan members as of the data collection date for the Actuarial Valuation. For the fiscal year ending April 30, 2019, a beginning of the year valuation date was used along with a rollforward of liabilities to the end of the fiscal year based on assumptions and standard rollforward techniques.

EXPECTED FUTURE WORKING LIFETIME

The chart below summarizes the expected future working lifetime of Fund Members as of April 30:

	2017	2018
Average Future Working Career (In Years)		
Active Plan Members	14.02	14.12
Inactive Plan Members	0.00	0.00
Total	8.41	8.11

The expected future working lifetime is measured as of the Actuarial Valuation Date and is based on the demographic assumptions used in the preparation of this report.

FUNDING POLICY

Components of the Actuarially Determined Contribution
Formal Funding Policy
Informal Funding Policy
Funding Policy – Other Considerations

COMPONENTS OF THE ACTUARIALLY DETERMINED CONTRIBUTION

The Actuarially Determined Contribution (ADC) includes the determination of the Normal Cost contribution for active Plan members, as well as a provision for the payment towards Unfunded Liability.

The actuarial funding method used in the determination of the Normal Cost and the Actuarial Accrued Liability is the Entry Age Normal Cost method (level percent of pay). The method allocates Normal Cost contributions by employee over the working career of the employee as a level percent of their pay.

Unfunded Liability is the excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The Actuarially Determined Contribution includes a payment towards Unfunded Liability existing at the Actuarial Valuation Date. The payment towards Unfunded Liability is set up as a level percent of payroll payment that is expected to increase during the payment period. The current year's employer contributions are being compared to the Actuarially Determined Contribution as developed in the May 1, 2017 actuarial valuation. The period of repayment as of that valuation is 23 years.

The Actuarial Value of Assets smooths gains and losses on the Market Value of Assets over a 5-year period.

Under no circumstances will the Actuarially Determined Contribution be less than the amount determined as the Statutory Minimum Contribution under Illinois statutes.

FORMAL FUNDING POLICY

There is no Formal Funding Policy that exists between the Pension Board and the Village at this time.

INFORMAL FUNDING POLICY

In determining the most appropriate Informal Funding Policy, GASB provides the following guidance in the Statement:

> *Application of professional judgment should consider the most recent five-year contribution history of the employers and nonemployer contributing entities as a key indicator of future contributions from those sources and should reflect all other known events and conditions.… the amount of projected cash flows for contributions from employers and nonemployer contributing entities should be limited to an average of contributions from those sources over the most recent five-year period and may be modified based on consideration of subsequent events. For this purpose, the basis for the average (for example, percentage of covered payroll contributed or percentage of Actuarially Determined Contributions made) should be a matter of professional judgment.*

In our review of Informal Funding Policy, the following factors are considered and described herein:

1. The five-year contribution history of the Employer (with a focus on the average contributions from those sources)

2. All other known events and conditions

3. Consideration of subsequent events

Five-Year Contribution History of the Employer

Employer contributions (under the informal policy) should be limited to the average over the most recent five years. In determining the basis for the average, we reviewed three possibilities: (a) the average dollar contribution; (b) the average percent of pensionable pay; and (c) the average percent of the Actuarially Determined Contribution. Please see the table below for a summary of these values:

Fiscal Year End	Employer Contributions	Most Applicable ADC	% of ADC	Covered Payroll	% of Payroll
4/30/2019	$1,608,383	$1,692,924	95.01%	$2,377,310	67.66%
4/30/2018	$1,347,509	$1,609,082	83.74%	$2,332,514	57.77%
4/30/2017	$1,082,203	$1,229,173	88.04%	$2,259,093	47.90%
4/30/2016	$930,548	$965,314	96.40%	$2,263,871	41.10%
4/30/2015	$852,360	$925,238	92.12%	$2,050,827	41.56%

When compared to the other policies reviewed, history suggests that a contribution as a percent of the Actuarially Determined Contribution is the least volatile, and as a result, the most stable contribution method under an Informal Funding Policy.

Other Known Events and Conditions

GASB has a provision for consideration of any other known events or conditions in the most recent five-year history in applying judgement for the Informal Funding Policy. There are no events or conditions that have been considered in the development of the Informal Funding Policy.

Consideration of Subsequent Events

GASB has a provision for modification based on consideration of subsequent events in development of the Informal Funding Policy. There are no subsequent events that have been considered in the development of the Informal Funding Policy.

Informal Funding Policy – Selected

The Informal Funding Policy that has been determined for future contributions is 91.06% of the Actuarially Determined Contribution. This represents the full future contributions expected to be made.

FUNDING POLICY – OTHER CONSIDERATIONS

Under GASB, the future contribution amount is not intended to include dollars contributed on behalf of future employees. Contributions are only intended to cover contributions towards the Normal Cost of existing employees as of the Actuarial Valuation Date as well as payment of Unfunded Liability on behalf of the current existing employees. Contributions under the funding policy have been adjusted as necessary to exclude dollars that would be anticipated to be contributed on behalf of future employees hired after the Actuarial Valuation Date.

The contribution level may not pay off the Unfunded Liability during the active working lifetimes of current employees. In that case contributions will persist beyond the working lifetimes of current employees. To the extent a portion of the above total contribution is anticipated to pay contributions for future employee Normal Cost, the amount has been netted out. The remaining amount is anticipated to be paid towards the Unfunded Liability existing for current employees.

The Actuarially Determined Contribution is determined annually based on the parameters previously discussed. The funding methods and procedures are assumed to continue into the future. The tax levy in the next December is assumed to be the Actuarially Determined Contribution. Funding is assumed to go into the Fund during the next full fiscal year.

SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in the Net Pension Liability
Schedule of Total Pension Liability and Related Ratios
Schedule of Contributions

SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Total Pension Liability										
Service Cost	$ 833,386	$ 767,204	$ 722,482	$ 684,090	$ 576,434					
Interest	1,954,434	1,873,714	1,807,155	1,531,380	1,409,785					
Changes of Benefit Terms	-	-	-	-	-					
Differences Between Expected and Actual Experience	883,165	103,287	38,375	914,636	664,318					
Changes in Assumptions	(950,133)	1,382,993	(287,739)	2,511,327	2,885,562					
Benefit Payments and Refunds	(1,380,968)	(1,273,537)	(1,136,499)	(1,076,666)	(955,295)					
Net Change In Total Pension Liability	$ 1,339,884	$ 2,853,661	$ 1,143,774	$ 4,564,767	$ 4,580,804					
Total Pension Liability - Beginning	33,760,438	30,906,777	29,763,003	25,198,236	20,617,432					
Total Pension Liability - Ending (a)	$ 35,100,322	$ 33,760,438	$ 30,906,777	$ 29,763,003	$ 25,198,236					
Plan Fiduciary Net Position										
Contributions - Employer	$ 1,608,383	$ 1,347,509	$ 1,082,203	$ 930,548	$ 852,360					
Contributions - Member	229,716	237,024	220,874	216,826	221,041					
Net Investment Income	552,452	347,035	527,755	54,803	305,324					
Benefit Payments and Refunds	(1,380,968)	(1,273,537)	(1,136,499)	(1,076,666)	(955,295)					
Administrative Expense	(49,609)	(37,455)	(24,092)	(18,381)	(11,376)					
Net Change in Plan Fiduciary Net Position	$ 959,974	$ 620,576	$ 670,241	$ 107,130	$ 412,055					
Plan Fiduciary Net Position - Beginning	9,220,244	8,599,668	7,929,427	7,822,297	7,410,242					
Plan Fiduciary Net Position - Ending (b)	$ 10,180,218	$ 9,220,244	$ 8,599,668	$ 7,929,427	$ 7,822,297					
Employer Net Pension Liability - Ending (a) - (b)	$ 24,920,104	$ 24,540,194	$ 22,307,109	$ 21,833,576	$ 17,375,939					

The current year information was developed in the completion of this report.

SCHEDULE OF TOTAL PENSION LIABILITY AND RELATED RATIO

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Total Pension Liability - Ending (a)	$ 35,100,322	$ 33,760,438	$ 30,906,777	$ 29,763,003	$ 25,198,236					
Plan Fiduciary Net Position - Ending (b)	$ 10,180,218	$ 9,220,244	$ 8,599,668	$ 7,929,427	$ 7,822,297					
Employer Net Pension Liability - Ending (a) - (b)	$ 24,920,104	$ 24,540,194	$ 22,307,109	$ 21,833,576	$ 17,375,939					
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	29.00%	27.31%	27.82%	26.64%	31.04%					
Covered-Employee Payroll	$ 2,377,310	$ 2,332,514	$ 2,259,093	$ 2,263,871	$ 2,050,827					
Employer Net Pension Liability as a Percentage of Covered-Employee Payroll	1,048.25%	1,052.09%	987.44%	964.44%	847.26%					

Covered Employee Payroll shown for the current year is estimated based on prior year pensionable payroll and expected increases for the Fund members during the fiscal year.

SCHEDULE OF CONTRIBUTIONS

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Actuarially Determined Contribution	$1,692,924	$1,609,082	$1,229,173	$965,314	$925,238					
Contributions in Relation to the Actuarially Determined Contribution	1,608,383	1,347,509	1,082,203	930,548	852,360					
Contribution Deficiency/(Excess)	$ 84,541	$ 261,573	$ 146,970	$ 34,766	$ 72,878					
Covered-Employee Payroll	$ 2,377,310	$ 2,332,514	$ 2,259,093	$ 2,263,871	$ 2,050,827					
Contributions as a Percentage of Covered-Employee Payroll	67.66%	57.77%	47.90%	41.10%	41.56%					

NOTES TO SCHEDULE OF CONTRIBUTIONS

The Actuarially Determined Contribution shown for the current year is from the May 1, 2017 Actuarial Report completed by Lauterbach & Amen, LLP for the tax levy recommendation for the December 2017 tax levy. The methods and assumptions shown below are based on the same Actuarial Valuation. For more detail on the age-based and service-based rates disclosed below, please see the Actuarial Valuation.

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level % Pay (Closed)
Remaining Amortization Period	23 Years
Asset Valuation Method	5-Year Smoothed Market Value
Inflation	2.50%
Payroll Increases	3.25%
Individual Pay Increases	4.00% - 8.03%
Investment Rate of Return	6.75%
Mortality Rates	RP-2014 Adjusted for Plan Status, Collar, and Illinois Public Pension Data, as Appropriate
Retirement Rates	L&A 2016 Illinois Police Retirement Rates Capped at age 65
Termination Rates	L&A 2016 Illinois Police Termination Rates
Disability Rates	L&A 2016 Illinois Police Disability Rates

GASB METHODS AND PROCEDURES

GASB Methods and Procedures
Methodology for Deferred Outflows and Inflows

GASB METHODS AND PROCEDURES

	Statement 67 Pension Fund Financials	Statement 68 Employer Financials
Fiscal Year End for Reporting	**April 30, 2019**	**April 30, 2019**
Measurement Date	April 30, 2019	April 30, 2019
Actuarial Valuation Date	May 1, 2018	May 1, 2018
Actuarial Valuation - Data Date	April 30, 2018	April 30, 2018
Asset Valuation Method	Market Value	Market Value
Actuarial Cost Method	Entry Age Normal (Level %)	Entry Age Normal (Level %)
Methodology Used in the Determination of Deferred Inflows and Outflows of Resources		
Amortization Method	Straight Line	Straight Line
Amortization Period		
Actuarial Experience (TPL)	8.11 Years	8.11 Years
Changes in Assumptions	8.11 Years	8.11 Years
Asset Experience	5.00 Years	5.00 Years

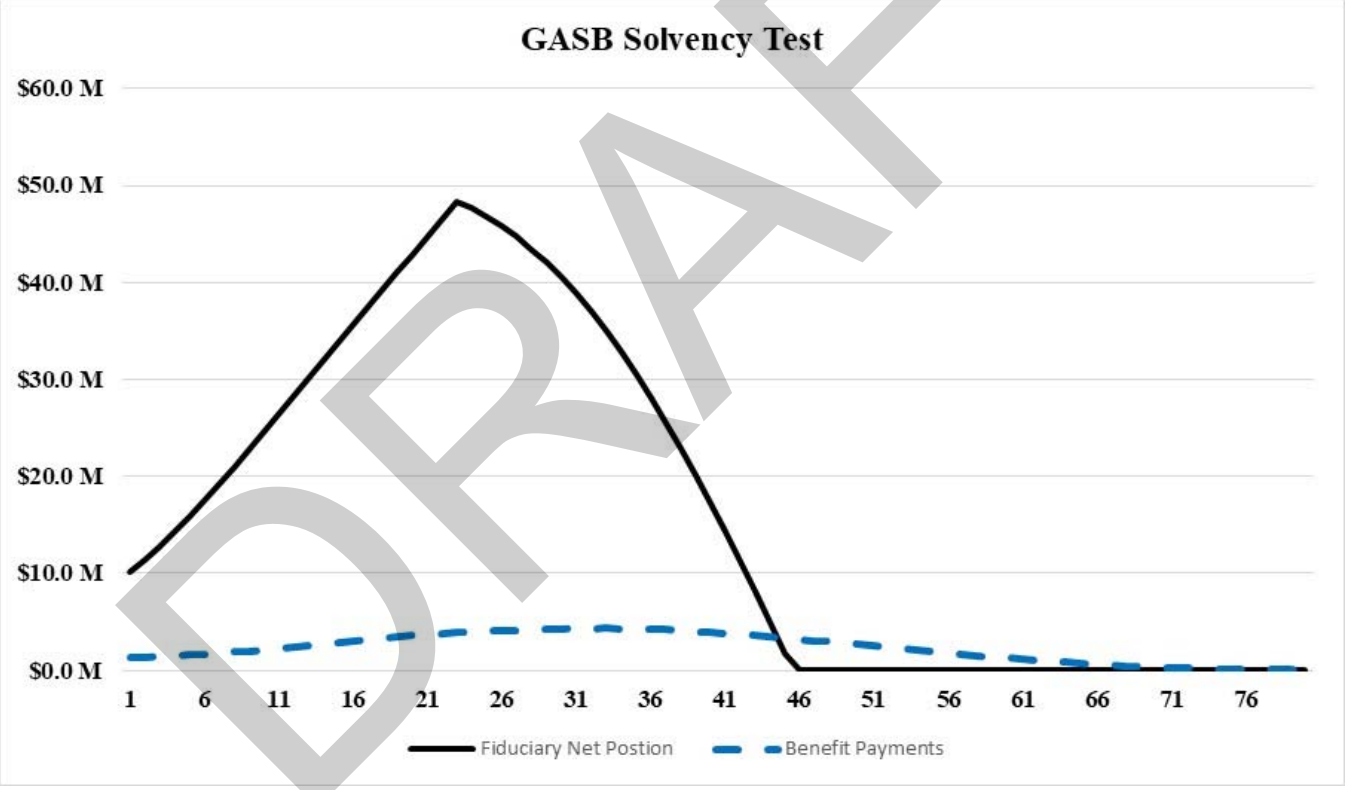
SUPPLEMENTARY TABLES

GASB Projections – Summary and Procedure
GASB Projections - Limitations
Projection of Contributions
Projection of the Pension Fund's Fiduciary Net Position
Actuarial Present Value of Projected Benefit Payments

GASB PROJECTIONS – SUMMARY AND PROCEDURE

GASB requires a solvency test to use in the determination of the Discount Rate each year. The Plan Fiduciary Net Position is projected forward. To the extent that the Plan Fiduciary Net Position is anticipated to be greater than $0, Projected Benefit Payments are discounted based on the current Long-Term Expected Rate of Return on Plan Assets assumption.

If the Plan Fiduciary Net Position is anticipated to reach $0 prior to the payment of Projected Benefit Payments for employees who are in the Plan as of the Actuarial Valuation Date, then the remaining Projected Benefit Payments are discounted using the High-Quality Municipal Bond Rate assumption, as described in the *Actuarial Assumptions Information* section of this report. The chart below is a high-level summary of the projections:



The Plan's Projected Fiduciary Net Position is anticipated to cover Projected Benefit Payments in full for the current employees through 2062.

GASB PROJECTIONS – LIMITATIONS

Projections of any type require assumptions about future events. The projections required for GASB reporting are deterministic in nature. That means that values are projected forward under one set of assumptions, which can be thought of as the average result. Actual results could vary, and projections of one deterministic assumption set do not necessarily provide a framework for making risk management or Funding Policy decisions. Projections that deal with risk management are outside the scope of this report.

In addition, GASB requirements create results that are specific only to financial statement reporting, and should not be used or interpreted for other purposes. For example, GASB cash flow projections do not entail the total expected cash flows of the Plan, but rather a subset of cash flows specific to Members who are in the Plan as of the Actuarial Valuation Date. While the likely expectation may be that future employees are hired to replace the current employees, cash flows attributable to their benefits are not considered. Under GASB, when the Plan Fiduciary Net Position reaches $0, that represents the Plan Fiduciary Net Position for the assets attributable to the current Plan Members.

Also, GASB mandates certain assumptions that are made in the projection process. Most notably, Projected Contributions under an Informal Funding Policy. In proposing an Informal Funding Policy, GASB suggests a focus be placed on the average contributions over the past 5 years. Projected Contributions in this section may be based on the five-year average, unless a Formal Funding Policy is in place.

Contributions reflecting an Informal Funding Policy are applied under GASB, whether or not the projected results dictate a need for more or less contributions. This would not be the case with other uses for projections. Any events that are taken into account (past or future) in the Informal Funding Policy are discussed in the *Funding Policy* section of this report.

Projections further into the future are more sensitive to assumption changes. For projections that run out close to 80 years, a small change in an assumption may have a dramatic impact on the projections. If the solvency of the Plan as determined by GASB remains constant, then dramatic changes in the projection results may not necessarily lead to big changes in the determination of the Total Pension Liability.

We recommend the projections are not used for any other purposes, other than providing information for purposes of the financial statement report.

The following pages provide the detail behind the chart shown on the prior page.

PROJECTION OF CONTRIBUTIONS – YEARS 1 TO 30

	Projected Covered-Employee Payroll			Projected Contributions			
Year	Current Employees (a)	Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Pay of Future Employees (f) - Notes	Total Contributions (d) + (e) + (f)
1	$ 2,333,110	$ 44,196	$ 2,377,306	$ 231,211	$ 1,709,001	$ -	$ 1,940,212
2	2,395,433	59,136	2,454,569	237,387	1,763,131	-	2,000,518
3	2,463,176	71,166	2,534,342	244,101	1,820,011	-	2,064,112
4	2,514,709	102,000	2,616,709	249,208	1,879,453	-	2,128,661
5	2,524,433	177,319	2,701,752	250,171	1,937,388	-	2,187,560
6	2,502,896	286,663	2,789,559	248,037	1,987,578	-	2,235,615
7	2,480,430	399,789	2,880,219	245,811	2,032,352	-	2,278,163
8	2,415,687	558,139	2,973,826	239,395	2,076,304	-	2,315,698
9	2,274,500	795,976	3,070,476	225,403	2,114,038	-	2,339,441
10	2,205,574	964,692	3,170,266	218,572	2,137,529	-	2,356,102
11	2,098,204	1,175,096	3,273,300	207,932	2,178,091	-	2,386,023
12	1,984,869	1,394,813	3,379,682	196,701	2,212,175	-	2,408,876
13	1,873,436	1,616,086	3,489,522	185,658	2,247,614	-	2,433,272
14	1,746,140	1,856,791	3,602,931	173,042	2,286,000	-	2,459,043
15	1,617,380	2,102,646	3,720,026	160,282	2,323,584	-	2,483,866
16	1,492,313	2,348,614	3,840,927	147,888	2,363,391	-	2,511,279
17	1,398,789	2,566,968	3,965,757	138,620	2,406,289	-	2,544,909
18	1,280,931	2,813,713	4,094,644	126,940	2,458,605	-	2,585,545
19	971,156	3,256,564	4,227,720	96,242	2,508,311	-	2,604,552
20	888,624	3,476,497	4,365,121	88,063	2,449,019	-	2,537,082
21	800,554	3,706,434	4,506,988	79,335	2,509,262	-	2,588,597
22	726,657	3,926,808	4,653,465	72,012	2,573,311	-	2,645,322
23	666,784	4,137,918	4,804,702	66,078	70,507	-	136,585
24	615,662	4,345,193	4,960,855	61,012	61,453	-	122,465
25	551,114	4,570,969	5,122,083	54,615	53,836	-	108,451
26	496,862	4,791,689	5,288,551	49,239	45,681	-	94,920
27	432,817	5,027,612	5,460,429	42,892	38,778	-	81,670
28	380,141	5,257,752	5,637,893	37,672	31,240	-	68,912
29	316,724	5,504,400	5,821,124	31,387	25,256	-	56,643
30	267,084	5,743,227	6,010,311	26,468	20,046	-	46,514

Column d – Contributions from current employees to the Plan (employees in the Plan as of the Actuarial Valuation Date).
Column e – Employer Contributions to the Plan excluding contributions for employees hired after the Actuarial Valuation Date.
Column f – Contributions from future employees to the extent that contributions are assumed to be greater than their Normal Cost.

PROJECTION OF CONTRIBUTIONS – YEARS 31 TO 60

	Projected Covered-Employee Payroll			Projected Contributions			
Year	Current Employees (a)	Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Pay of Future Employees (f) - Notes	Total Contributions (d) + (e) + (f)
31	$ 215,453	$ 5,990,193	$ 6,205,646	$ 21,351	$ 16,455	$ -	$ 37,806
32	168,016	6,239,313	6,407,329	16,650	13,159	-	29,809
33	128,689	6,486,878	6,615,567	12,753	10,221	-	22,974
34	90,529	6,740,044	6,830,573	8,971	7,697	-	16,668
35	58,349	6,994,218	7,052,567	5,782	5,410	-	11,192
36	36,869	7,244,906	7,281,775	3,654	2,934	-	6,588
37	26,700	7,491,733	7,518,433	2,646	1,694	-	4,340
38	9,174	7,753,608	7,762,782	909	1,212	-	2,121
39	6,310	8,008,763	8,015,073	625	319	-	944
40	-	8,275,563	8,275,563	-	220	-	220
41	-	8,544,518	8,544,518	-	-	-	-
42	-	8,822,215	8,822,215	-	-	-	-
43	-	9,108,937	9,108,937	-	-	-	-
44	-	9,404,978	9,404,978	-	-	-	-
45	-	9,710,639	9,710,639	-	-	-	-
46	-	10,026,235	10,026,235	-	-	-	-
47	-	10,352,088	10,352,088	-	-	-	-
48	-	10,688,531	10,688,531	-	-	-	-
49	-	11,035,908	11,035,908	-	-	-	-
50	-	11,394,575	11,394,575	-	-	-	-
51	-	11,764,899	11,764,899	-	-	-	-
52	-	12,147,258	12,147,258	-	-	-	-
53	-	12,542,044	12,542,044	-	-	-	-
54	-	12,949,660	12,949,660	-	-	-	-
55	-	13,370,524	13,370,524	-	-	-	-
56	-	13,805,066	13,805,066	-	-	-	-
57	-	14,253,731	14,253,731	-	-	-	-
58	-	14,716,977	14,716,977	-	-	-	-
59	-	15,195,279	15,195,279	-	-	-	-
60	-	15,689,125	15,689,125	-	-	-	-

Column d – Contributions from current employees to the Plan (employees in the Plan as of the Actuarial Valuation Date).
Column e – Employer Contributions to the Plan excluding contributions for employees hired after the Actuarial Valuation Date.
Column f – Contributions from future employees to the extent that contributions are assumed to be greater than their Normal Cost.

PROJECTION OF CONTRIBUTIONS – YEARS 61 TO 80

	Projected Covered-Employee Payroll			Projected Contributions			
Year	Current Employees (a)	Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Pay of Future Employees (f) - Notes	Total Contributions (d) + (e) + (f)
61	$ -	$ 16,199,022	$ 16,199,022	$ -	$ -	$ -	$ -
62	-	16,725,490	16,725,490	-	-	-	-
63	-	17,269,069	17,269,069	-	-	-	-
64	-	17,830,313	17,830,313	-	-	-	-
65	-	18,409,798	18,409,798	-	-	-	-
66	-	19,008,117	19,008,117	-	-	-	-
67	-	19,625,881	19,625,881	-	-	-	-
68	-	20,263,722	20,263,722	-	-	-	-
69	-	20,922,293	20,922,293	-	-	-	-
70	-	21,602,267	21,602,267	-	-	-	-
71	-	22,304,341	22,304,341	-	-	-	-
72	-	23,029,232	23,029,232	-	-	-	-
73	-	23,777,682	23,777,682	-	-	-	-
74	-	24,550,457	24,550,457	-	-	-	-
75	-	25,348,347	25,348,347	-	-	-	-
76	-	26,172,168	26,172,168	-	-	-	-
77	-	27,022,763	27,022,763	-	-	-	-
78	-	27,901,003	27,901,003	-	-	-	-
79	-	28,807,786	28,807,786	-	-	-	-
80	-	29,744,039	29,744,039	-	-	-	-

NOTES TO PROJECTION OF CONTRIBUTIONS

Total Employee Payroll is projected to increase annually at the Projected Increase in Total Payroll rate shown in the *Actuarial Assumptions Information* section of this report. Payroll for current employees (employees in the Plan as of the Actuarial Valuation Date) are projected on an employee by employee basis, using the Projected Individual Pay Increases and probability of remaining an employee in the future.

Employer Contributions are related to current employees in the Plan as of the Actuarial Valuation Date. To the extent that Projected Contributions under the Funding Policy are made to cover the Normal Cost of benefit payments for future employees, those contributions are excluded for purposes of these projections and this report.

Contributions are based on the Funding Policy as described in the *Funding Policy* section of this report. The contributions do not factor in changes in the Funding Policy based on an assumed Employer decision; if, the projections were to play out in this fashion. The only future events that are considered were outlined in the *Funding Policy* section of this report. Contributions from future employees have not been included. It is assumed that contributions made by future employees will not exceed the Normal Cost of their participation in the Plan. In addition, Employer Contributions on behalf of future employees have not been included per the GASB parameters.

PROJECTION OF THE PENSION PLAN'S FIDUCIARY NET POSITION – YEARS 1 TO 30

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (a)+(b)-(c)-(d)+(e)
1	$ 10,180,218	$ 1,940,212	$ 1,361,538	$ 28,887	$ 705,720	$ 11,435,725
2	11,435,725	2,000,518	1,394,713	29,609	791,358	12,803,280
3	12,803,280	2,064,112	1,453,045	30,349	883,821	14,267,817
4	14,267,817	2,128,661	1,532,992	31,108	982,132	15,814,510
5	15,814,510	2,187,560	1,616,592	31,886	1,085,673	17,439,265
6	17,439,265	2,235,615	1,701,193	32,683	1,194,084	19,135,088
7	19,135,088	2,278,163	1,798,657	33,500	1,306,671	20,887,765
8	20,887,765	2,315,698	1,916,984	34,338	1,422,222	22,674,364
9	22,674,364	2,339,441	2,020,275	35,196	1,540,104	24,498,437
10	24,498,437	2,356,102	2,148,525	36,076	1,659,433	26,329,371
11	26,329,371	2,386,023	2,280,733	36,978	1,779,538	28,177,221
12	28,177,221	2,408,876	2,415,850	37,902	1,900,448	30,032,793
13	30,032,793	2,433,272	2,565,947	38,850	2,021,425	31,882,692
14	31,882,692	2,459,043	2,713,135	39,821	2,142,162	33,730,941
15	33,730,941	2,483,866	2,862,969	40,817	2,262,666	35,573,688
16	35,573,688	2,511,279	3,011,255	41,837	2,382,938	37,414,813
17	37,414,813	2,544,909	3,148,603	42,883	2,503,678	39,271,914
18	39,271,914	2,585,545	3,378,235	43,955	2,622,617	41,057,886
19	41,057,886	2,604,552	3,485,665	45,054	2,740,149	42,871,869
20	42,871,869	2,537,082	3,602,584	46,180	2,856,332	44,616,518
21	44,616,518	2,588,597	3,703,526	47,335	2,972,389	46,426,643
22	46,426,643	2,645,322	3,798,152	48,518	3,093,253	48,318,548
23	48,318,548	136,585	3,884,178	49,731	3,133,342	47,654,567
24	47,654,567	122,465	3,965,266	50,974	3,085,268	46,846,060
25	46,846,060	108,451	4,063,047	52,249	3,026,878	45,866,094
26	45,866,094	94,920	4,121,184	53,555	2,958,267	44,744,542
27	44,744,542	81,670	4,164,225	54,894	2,880,618	43,487,712
28	43,487,712	68,912	4,206,757	56,266	2,793,869	42,087,470
29	42,087,470	56,643	4,245,253	57,673	2,697,592	40,538,780
30	40,538,780	46,514	4,302,238	59,114	2,590,742	38,814,683

Column b – Contributions on behalf of current employees in the Plan as of the Actuarial Valuation Date.
Column d – Based on the average Administrative Expenses in recent years, and projected to increase in the future.
Column e – Based on the current Long-Term Expected Rate of Return on Plan Assets assumption, and does not factor in allocation changes.

PROJECTION OF THE PENSION PLAN'S FIDUCIARY NET POSITION – YEARS 31 TO 60

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (a)+(b)-(c)-(d)+(e)
31	$ 38,814,683	$ 37,806	$ 4,322,458	$ 60,592	$ 2,473,339	$ 36,942,778
32	36,942,778	29,809	4,318,732	62,107	2,346,790	34,938,539
33	34,938,539	22,974	4,330,767	63,660	2,210,815	32,777,901
34	32,777,901	16,668	4,307,446	65,251	2,065,492	30,487,364
35	30,487,364	11,192	4,281,464	66,883	1,911,518	28,061,728
36	28,061,728	6,588	4,226,727	68,555	1,749,423	25,522,457
37	25,522,457	4,340	4,169,211	70,269	1,579,830	22,867,148
38	22,867,148	2,121	4,093,604	71,742	1,403,024	20,106,947
39	20,106,947	944	4,012,828	63,713	1,219,668	17,251,018
40	17,251,018	220	3,920,222	55,387	1,030,274	14,305,903
41	14,305,903	-	3,820,263	46,786	835,136	11,273,990
42	11,273,990	-	3,713,320	37,924	634,390	8,157,135
43	8,157,135	-	3,599,602	28,808	428,148	4,956,873
44	4,956,873	-	3,479,734	19,443	216,492	1,674,188
45	1,674,188	-	3,354,249	9,831	-	-
46	-	-	3,223,687	-	-	-
47	-	-	3,088,634	-	-	-
48	-	-	2,949,826	-	-	-
49	-	-	2,808,090	-	-	-
50	-	-	2,664,023	-	-	-
51	-	-	2,518,315	-	-	-
52	-	-	2,371,623	-	-	-
53	-	-	2,224,626	-	-	-
54	-	-	2,078,179	-	-	-
55	-	-	1,933,286	-	-	-
56	-	-	1,790,874	-	-	-
57	-	-	1,651,621	-	-	-
58	-	-	1,516,215	-	-	-
59	-	-	1,385,112	-	-	-
60	-	-	1,258,518	-	-	-

Column b – Contributions on behalf of current employees in the Plan as of the Actuarial Valuation Date.
Column d – Based on the average Administrative Expenses in recent years, and projected to increase in the future.
Column e – Based on the current Long-Term Expected Rate of Return on Plan Assets assumption, and does not factor in allocation changes.

PROJECTION OF THE PENSION PLAN'S FIDUCIARY NET POSITION – YEARS 61 TO 80

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (a)+(b)-(c)-(d)+(e)
61	$ -	$ -	$ 1,136,859	$ -	$ -	$ -
62	-	-	1,020,532	-	-	-
63	-	-	910,026	-	-	-
64	-	-	805,865	-	-	-
65	-	-	708,578	-	-	-
66	-	-	618,473	-	-	-
67	-	-	535,500	-	-	-
68	-	-	459,891	-	-	-
69	-	-	391,512	-	-	-
70	-	-	329,994	-	-	-
71	-	-	275,225	-	-	-
72	-	-	226,864	-	-	-
73	-	-	184,587	-	-	-
74	-	-	148,150	-	-	-
75	-	-	117,140	-	-	-
76	-	-	91,134	-	-	-
77	-	-	69,662	-	-	-
78	-	-	52,279	-	-	-
79	-	-	38,468	-	-	-
80	-	-	27,734	-	-	-

NOTES TO PROJECTION OF THE PENSION PLAN'S FIDUCIARY NET POSITION

Projected Total Contributions are Employee and Employer Contributions projected to be made under the Funding Policy on behalf of current employees in the Plan as of the Actuarial Valuation Date. The amounts shown are detailed earlier in this section.

Projected Benefit Payments shown represents current employees as of the Actuarial Valuation Date. The Plan will pay benefits in the future on behalf of employees hired after the Actuarial Valuation Date, but those benefit payments are not projected for this purpose.

Projected Investment Earnings are based on the current Long-Term Expected Rate of Return on Plan Assets assumption. Administrative Expenses are typically not charged on a per employee basis. Administrative Expenses shown are not projected to distinguish between current and future employees.

The Projected Net Position represents assets held or projected to be held on behalf of current employees in the Plan as of the Actuarial Valuation Date. The Plan will hold assets in the future on behalf of employees hired after the Actuarial Valuation Date, but those assets are not projected for this purpose.

ACTUARIAL PRESENT VALUE OF PROJECTED BENEFIT PAYMENTS – YEARS 1 TO 30

			Projected Benefit Payments		Present Value (PV) of Projected Benefit Payments		
Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	PV of "Funded" Portion of Benefit Payments (6.75%)	PV of "Unfunded" Portion of Benefit Payments (3.79%)	PV of Total Projected Payments Using the Single Discount Rate (6.09%)
1	$ 10,180,218	$ 1,361,538	$ 1,361,538	$ -	$ 1,317,789	$ -	$ 1,321,882
2	11,435,725	1,394,713	1,394,713	-	1,264,541	-	1,276,360
3	12,803,280	1,453,045	1,453,045	-	1,234,126	-	1,253,409
4	14,267,817	1,532,992	1,532,992	-	1,219,698	-	1,246,463
5	15,814,510	1,616,592	1,616,592	-	1,204,883	-	1,238,983
6	17,439,265	1,701,193	1,701,193	-	1,187,764	-	1,228,978
7	19,135,088	1,798,657	1,798,657	-	1,176,406	-	1,224,798
8	20,887,765	1,916,984	1,916,984	-	1,174,517	-	1,230,439
9	22,674,364	2,020,275	2,020,275	-	1,159,534	-	1,222,300
10	24,498,437	2,148,525	2,148,525	-	1,155,169	-	1,225,274
11	26,329,371	2,280,733	2,280,733	-	1,148,713	-	1,226,006
12	28,177,221	2,415,850	2,415,850	-	1,139,828	-	1,224,091
13	30,032,793	2,565,947	2,565,947	-	1,134,094	-	1,225,511
14	31,882,692	2,713,135	2,713,135	-	1,123,324	-	1,221,424
15	33,730,941	2,862,969	2,862,969	-	1,110,407	-	1,214,890
16	35,573,688	3,011,255	3,011,255	-	1,094,071	-	1,204,463
17	37,414,813	3,148,603	3,148,603	-	1,071,637	-	1,187,106
18	39,271,914	3,378,235	3,378,235	-	1,077,090	-	1,200,569
19	41,057,886	3,485,665	3,485,665	-	1,041,070	-	1,167,638
20	42,871,869	3,602,584	3,602,584	-	1,007,953	-	1,137,529
21	44,616,518	3,703,526	3,703,526	-	970,675	-	1,102,273
22	46,426,643	3,798,152	3,798,152	-	932,530	-	1,065,545
23	48,318,548	3,884,178	3,884,178	-	893,350	-	1,027,127
24	47,654,567	3,965,266	3,965,266	-	854,333	-	988,377
25	46,846,060	4,063,047	4,063,047	-	820,047	-	954,614
26	45,866,094	4,121,184	4,121,184	-	779,186	-	912,691
27	44,744,542	4,164,225	4,164,225	-	737,539	-	869,283
28	43,487,712	4,206,757	4,206,757	-	697,960	-	827,752
29	42,087,470	4,245,253	4,245,253	-	659,810	-	787,375
30	40,538,780	4,302,238	4,302,238	-	626,386	-	752,139

The Projected Fiduciary Net Position and Benefit Payments are based on current employees in the Plan as of the Actuarial Valuation Date. The development of the Projected Fiduciary Net Position is shown in more detail earlier in this section.

ACTUARIAL PRESENT VALUE OF PROJECTED BENEFIT PAYMENTS – YEARS 31 TO 60

			Projected Benefit Payments		Present Value (PV) of Projected Benefit Payments		
Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	PV of "Funded" Portion of Benefit Payments (6.75%)	PV of "Unfunded" Portion of Benefit Payments (3.79%)	PV of Total Projected Payments Using the Single Discount Rate (6.09%)
31	$ 38,814,683	$ 4,322,458	$ 4,322,458	$ -	$ 589,536	$ -	$ 712,295
32	36,942,778	4,318,732	4,318,732	-	551,782	-	670,828
33	34,938,539	4,330,767	4,330,767	-	518,333	-	634,082
34	32,777,901	4,307,446	4,307,446	-	482,943	-	594,464
35	30,487,364	4,281,464	4,281,464	-	449,677	-	556,960
36	28,061,728	4,226,727	4,226,727	-	415,857	-	518,276
37	25,522,457	4,169,211	4,169,211	-	384,261	-	481,877
38	22,867,148	4,093,604	4,093,604	-	353,436	-	445,979
39	20,106,947	4,012,828	4,012,828	-	324,554	-	412,083
40	17,251,018	3,920,222	3,920,222	-	297,016	-	379,463
41	14,305,903	3,820,263	3,820,263	-	271,140	-	348,560
42	11,273,990	3,713,320	3,713,320	-	246,885	-	319,354
43	8,157,135	3,599,602	3,599,602	-	224,192	-	291,803
44	4,956,873	3,479,734	3,479,734	-	203,022	-	265,893
45	1,674,188	3,354,249	1,674,188	1,680,061	91,503	320,926	241,592
46	-	3,223,687	-	3,223,687	-	593,304	218,860
47	-	3,088,634	-	3,088,634	-	547,690	197,654
48	-	2,949,826	-	2,949,826	-	503,976	177,934
49	-	2,808,090	-	2,808,090	-	462,241	159,662
50	-	2,664,023	-	2,664,023	-	422,513	142,775
51	-	2,518,315	-	2,518,315	-	384,819	127,219
52	-	2,371,623	-	2,371,623	-	349,170	112,931
53	-	2,224,626	-	2,224,626	-	315,568	99,850
54	-	2,078,179	-	2,078,179	-	284,029	87,922
55	-	1,933,286	-	1,933,286	-	254,578	77,097
56	-	1,790,874	-	1,790,874	-	227,213	67,318
57	-	1,651,621	-	1,651,621	-	201,894	58,520
58	-	1,516,215	-	1,516,215	-	178,574	50,638
59	-	1,385,112	-	1,385,112	-	157,176	43,604
60	-	1,258,518	-	1,258,518	-	137,596	37,345

The Projected Fiduciary Net Position and Benefit Payments are based on current employees in the Plan as of the Actuarial Valuation Date. The development of the Projected Fiduciary Net Position is shown in more detail earlier in this section.

ACTUARIAL PRESENT VALUE OF PROJECTED BENEFIT PAYMENTS – YEARS 61 TO 80

			Projected Benefit Payments		Present Value (PV) of Projected Benefit Payments		
Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	PV of "Funded" Portion of Benefit Payments (6.75%)	PV of "Unfunded" Portion of Benefit Payments (3.79%)	PV of Total Projected Payments Using the Single Discount Rate (6.09%)
61	$ -	$ 1,136,859	$ -	$ 1,136,859	$ -	$ 119,756	$ 31,798
62	-	1,020,532	-	1,020,532	-	103,577	26,906
63	-	910,026	-	910,026	-	88,989	22,615
64	-	805,865	-	805,865	-	75,925	18,877
65	-	708,578	-	708,578	-	64,322	15,645
66	-	618,473	-	618,473	-	54,092	12,872
67	-	535,500	-	535,500	-	45,125	10,505
68	-	459,891	-	459,891	-	37,339	8,504
69	-	391,512	-	391,512	-	30,626	6,824
70	-	329,994	-	329,994	-	24,871	5,422
71	-	275,225	-	275,225	-	19,986	4,262
72	-	226,864	-	226,864	-	15,873	3,312
73	-	184,587	-	184,587	-	12,443	2,540
74	-	148,150	-	148,150	-	9,622	1,921
75	-	117,140	-	117,140	-	7,330	1,432
76	-	91,134	-	91,134	-	5,495	1,050
77	-	69,662	-	69,662	-	4,047	757
78	-	52,279	-	52,279	-	2,926	535
79	-	38,468	-	38,468	-	2,074	371
80	-	27,734	-	27,734	-	1,441	252

NOTES TO THE ACTUARIAL PRESENT VALUE OF PROJECTED BENEFIT PAYMENTS

The Projected Fiduciary Net Position and Benefit Payments are based on current employees in the Plan as of the Actuarial Valuation Date. The development of the Projected Fiduciary Net Position is shown in more detail earlier in this section.

The Funded and Unfunded Portion of Benefit Payments are split based on the time that the Projected Fiduciary Net Position is to reach $0 (based on assets for current Plan Members).

The Present Value ("PV") of the Funded and Unfunded Portion of Benefit Payments are determined separately. The PV of the Funded Portion of Benefit Payments uses the current Long-Term Expected Rate of Return on Plan Assets assumption. The PV of the Unfunded Portion of Benefit Payments are determined using the High-Quality Municipal Bond Rate assumption as of the Measurement Date, as described in the *Actuarial Assumptions Information* section of this report.

The Discount Rate used for GASB purposes is the rate such that when applied to the Total Projected Benefit Payments results in a Present Value that equals the sum of the Present Value of the Funded and Unfunded Portion of Benefit Payments. The Discount Rate is rounded to four decimal places; therefore, the resulting Present Value comparisons may show a slight difference due to rounding.

Lauterbach & Amen, LLP

CERTIFIED PUBLIC ACCOUNTANTS